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FLIGHT

The AIRCRAFT ENGINEER & SHIPS

A JOURNAL OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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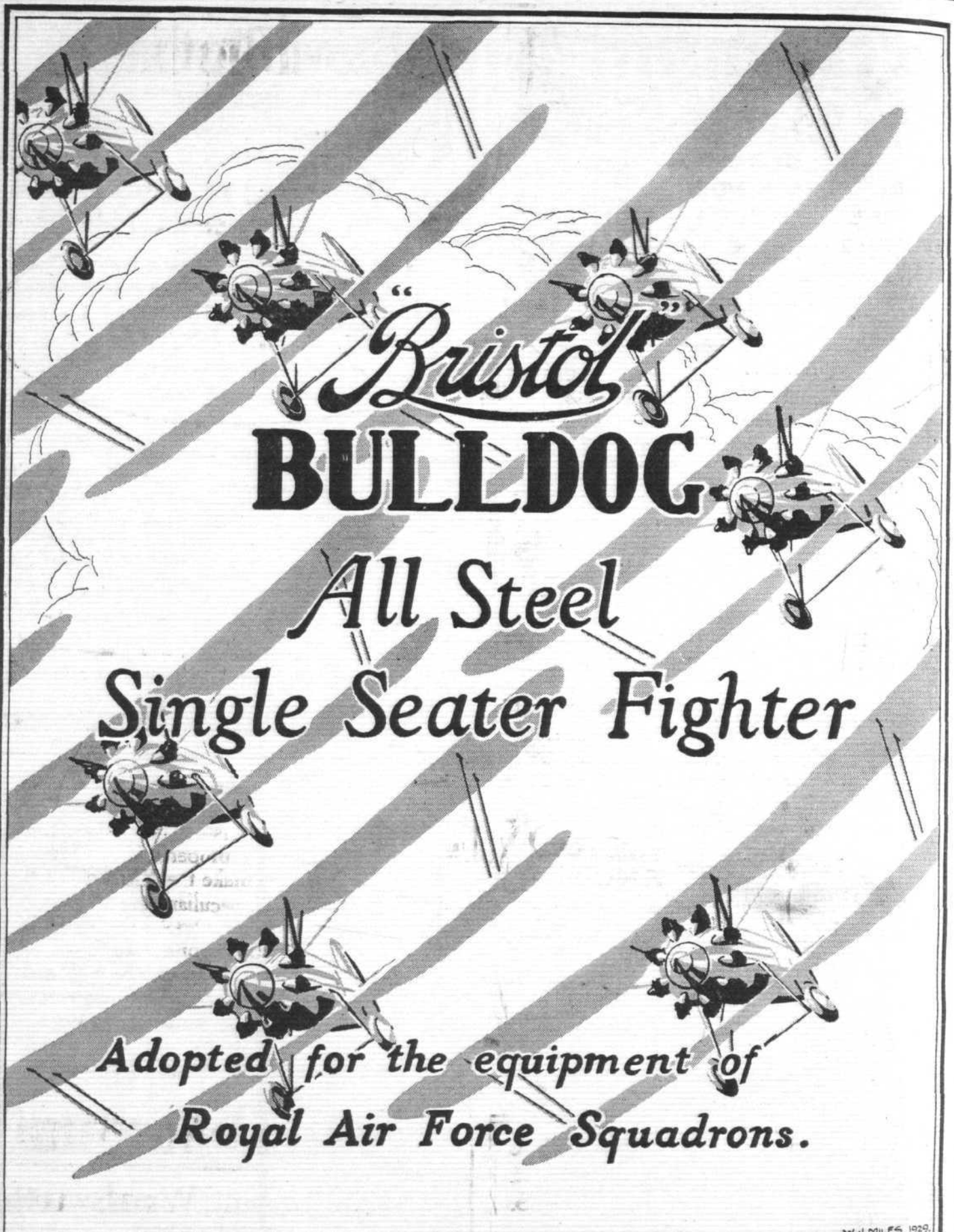
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The AIRCRAFT ENGINEER & AIRSHIPS

First Aeronautical Weekly in the World. Founded January, 1909

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1929.

May 23-June 8	Royal Tournament, Olympia.
June 7	Entries close for King's Cup Race.
June 9	Cambridge Air Meeting (Marshalls).
June 10-11	Cambridge Aero Club Display, Conington v. Aerodrome.
June 19-22	F.I.A. Conference, Copenhagen.
June 27-30	Rotterdam International Air Meeting.
July 5-6	King's Cup Race and Siddeley Trophy Tour.
July 13	R.A.F. Display at Hendon.
July 16-27	7th International Aero Exhibition, Olympia.
July 25	Bleriot Cross-Channel Flight Anniversary Fete, Calais.
July 28	International Flying Meeting, Sweden.
Aug. 1-14	French Light Plane Meeting, Orly.
Aug. 15	International Balloon Race, Poland.
Sept. 6-7	Schneider Trophy Race, Solent.
Sept. 10-20	Aero Club de France Meeting, Le Baule.
Oct. 1	Gordon-Bennett Balloon Race, St. Louis, U.S.A.
Oct. 31	Guggenheim Safe-Aircraft Competition Closes.

EDITORIAL COMMENT

The King's Cup Race

FULL particulars of the course for this year's race for the King's Cup are now available, and reveal the fact that the race is very nearly a "Circuit of Britain," as this particular race very properly ought to be. In past years we have had some rather peculiar courses, and FLIGHT has always maintained that, whatever is done with other races and meetings, in the very nature of things the race for the cup presented by His Majesty should afford an opportunity to as many of His Majesty's subjects as possible to see the competing machines. It is therefore with all the more satisfaction that we place on record the fact that this year the inhabitants of quite a large number of English towns and districts will have an excellent opportunity to see the thirty or so aeroplanes which will compete.

Detailed particulars of the King's Cup course, with a sketch map, will be published next week. In the meantime, it will suffice if we point out here that the race is to start, on July 5, from Heston aerodrome, and that on the first day of the race the competing machines will call at Norwich, via Henlow, at Lympne, via Hadleigh and Hornchurch, at Southampton, Bristol and Blackpool, where a halt will be made for the night. The next morning the machines will go to Renfrew via Silloth, to Newcastle via Dunbar, to Leeds, Nottingham, Birmingham, and back to Heston. The mileage to be covered on the first day is 595, and on the second 584, giving a total of approximately 1,180 miles. During the first day's flying the longest single stage will be from Bristol to Blackpool, a distance of approximately 165 miles, and on the second day some slightly smaller stages are called for, although these have turning points *en route*.

At the controls there will be compulsory stops of 40 minutes, and thus visitors to the 11 aerodromes concerned will have an excellent opportunity not only of witnessing the progress of the race, but also of inspecting the machines taking part in the race.

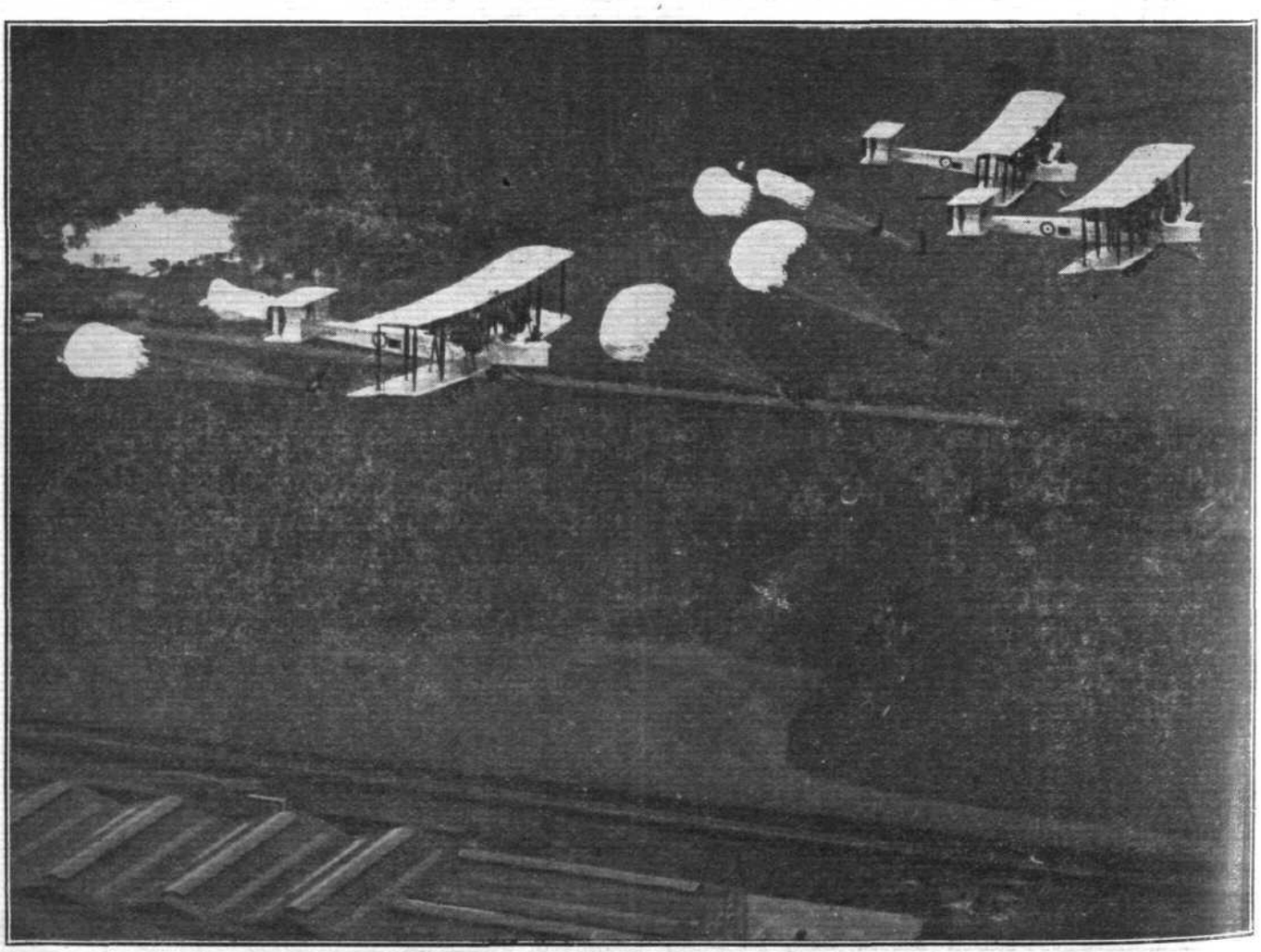
The basis for this year's King's Cup Race will be a handicap "on form," *i.e.*, the handicappers will use

their judgment in estimating the speeds of the various machines. Attempts to run the King's Cup Race on a formula basis have been made, but have not proved very successful, owing to the difficulty of evolving a formula that will be fair to all. Nor, we think, is the King's Cup Race a suitable opportunity for trying out formula racing. It is extremely unlikely that any formula will ever give very close finishes, and to maintain interest in a race like this close finishes are undoubtedly desirable. Capt. Goodman Crouch attained fame in past years as a handicapper, and his absence will be regretted by all, but Capt. Dancy, who worked in close co-operation with Crouch in past years, may be relied upon to produce accuracy of a high order in his estimate of speeds. That his task will be no easy one, what with the apparent similarity of many of the light 'planes taking part, is granted. "Faking" will be attempted, and may in some cases give highly successful results, but taking it all around, we do not expect Capt. Dancy to allow himself to be "cheated" to any marked degree. That there will be the usual grumbles from competitors is a foregone conclusion, but it should be borne in mind that the more grumbling there is—or, in other words, the greater the number of competitors who consider themselves "handicapped right out of the race"—the better the handicapping is likely to prove. Thus the greater the skill of the handicapper, the more unpopular is he likely to be. We sympathise with Capt. Dancy, and hope that he will be so successful with his speed estimates that he will not dare to show himself at Heston at the start!

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The Rotterdam Meeting

In our issue of February 21 we published a résumé of the rules and regulations governing the International Light 'Plane meeting which is to be held at Rotterdam on June 27–30. The meeting is being organised by the Rotterdam Aero Club, and we are informed that the club is particularly anxious to secure a large entry from England. From personal experience last year, we have no hesitation in urging every British light 'plane club and private owner who can possibly do so to make an effort to take part in this year's meeting. The competition need not be taken too seriously, and is mainly an excuse for bringing together and promoting friendship between light 'plane enthusiasts in the various countries, and it would be impossible to imagine more delightful hosts than the officials of the Rotterdam Aero Club. This year all those who take part in the meeting will be housed under one roof, and the social side will be well looked after. The fact that the King's Cup Race is being held shortly afterwards may, unfortunately, prevent many from going to Rotterdam, but to those for whom the British race is regarded as a little too strenuous, we would say "go to Holland instead." We are quite sure they will not regret it.



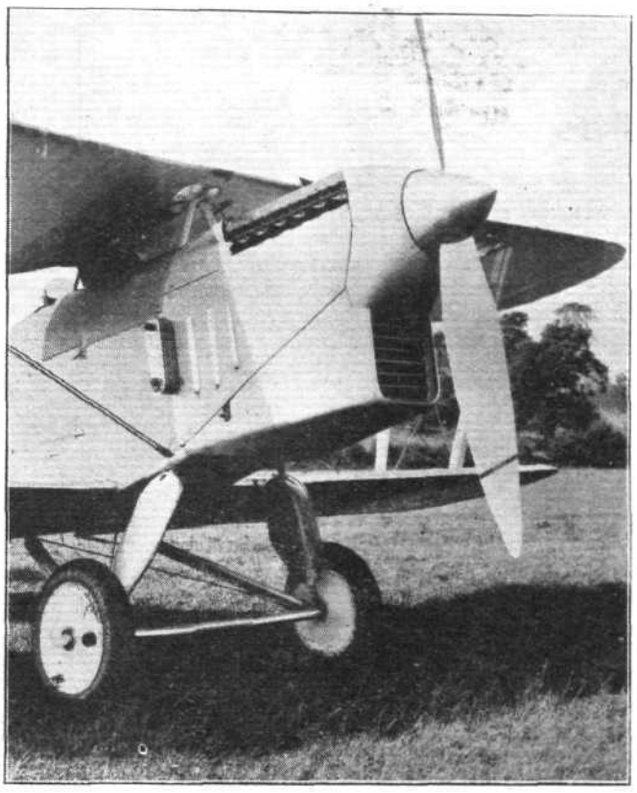
A DRESS REHEARSAL: A striking picture, taken from the air, of six airmen making a simultaneous parachute drop from three Vickers "Vimy" bombers, during a rehearsal of this event, at Henlow, for the forthcoming R.A.F. Display.

THE AVRO "ANTELOPE"

A High-Performance Day Bomber, which can also be used as a Two-Seater Fighter, Reconnaissance or General Purpose Aircraft

DESIGNED primarily as a high-performance day bomber, the Avro "Antelope" shown in the accompanying illustrations possesses qualities of speed, manœuvrability and general performance which render it particularly suitable for the alternative use as a two-seater fighter, reconnaissance or general purpose aircraft. The aerodynamic design is simple and straightforward, and the all-metal construction makes use chiefly of duralumin, with highly-stressed parts and fittings of stainless steel.

Apart from aerodynamic efficiency, the designer of a military aircraft is always faced with the problem of providing as good a view as possible for the crew. In the "Antelope" this has been attempted in the following manner: The biplane wings, of which the upper is of larger span and chord than the lower, are given a considerable sweep-back, so that, although the attachment to the fuselage is fairly far forward, both cockpits are aft of the upper wing. In addition, the forward (pilot's) cockpit is raised so as to bring its coaming near the top plane. Moreover, the pilot's seat is adjustable in such a manner that he can raise and lower himself during flight to the height which gives him the best view for fighting. The lower plane is well set back on the fuselage, and its narrow chord affords a good view in a forward and downward direction, both for fighting and for landing. The fuselage itself is narrow, and with a cambered deck, which slopes down towards the nose, thereby further improving the view forward. Finally, the top wing, whose spars are attached at the centre to a cabane, taper down to quite a small thickness on the centre line, so that here again the view is obstructed to as small an extent as possible.



The Avro "Antelope" is a high-performance day bomber. This view shows the engine cowling, radiator and undercarriage.

The rear cockpit for the bomber or gunner is behind that of the pilot, and on a slightly lower level. The mounting for the Lewis gun is of the special "Avro" type, having special patented features, including a wind-balanced device enabling the gunner to work his machine gun while the machine is travelling at high speed. A very wide field of fire is provided for this gun, and "blind spots" are reduced to a minimum. The pilot is provided with the usual Vickers gun, firing forward "through" the propeller by means of an interrupter gear.

Bombs are carried on bomb racks under the lower wing, and a prone bombing position is provided in the fuselage, with a sliding window in the floor.

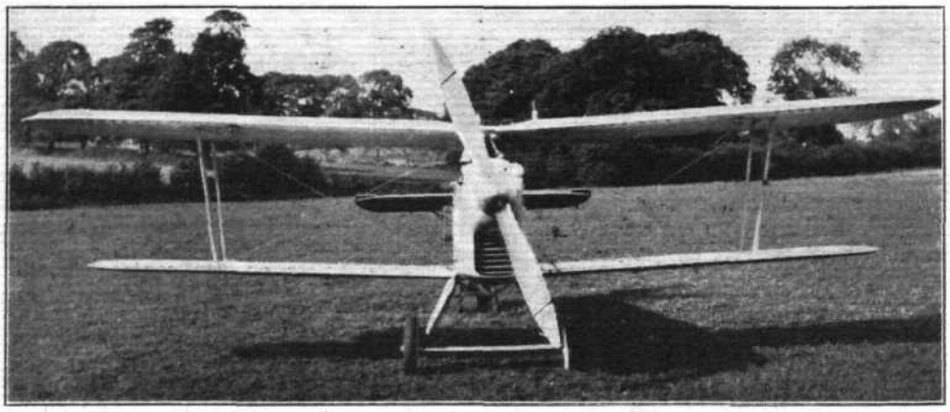
Constructional Features

In the construction of the fuselage of the Avro "Antelope" duralumin is used extensively. The structure is of the type in which the skin or planking assists in resisting loads, and consists mainly of L-section longerons and other members,



THE AVRO "ANTELOPE": Side view. The engine is a Rolls-Royce F. XI B.

to which the flat plate covering is riveted. The front portion of the fuselage, or more accurately the engine-mounting, is a welded steel tube structure, separated from the fuselage proper by a fireproof bulkhead.



THE AVRO "ANTELOPE": Front view. Note the thinning-down of the top wing along centre line.

The wings also are of all-metal construction, with spars and ribs of duralumin, but with fabric covering. All wing fittings are of stainless steel.

The tail surfaces have a welded steel tube structure covered with fabric, and the tail plane is of the trimming type, with a control wheel in the pilot's cockpit.

The undercarriage is of the oleo and rubber compression type, with long travel. It has the usual wheel axle, and bracing is in the plane of the rear struts or radius rods, the front legs being telescopic. The tail skid consists of a leaf spring with a shoe of chilled cast iron. Bouncing is reduced by the friction between the laminations of the leaf spring, and this type of tail skid has proved very successful.

Concerning the engine installation, &c., it may be pointed out that the Rolls-Royce F type engine is cooled by means of a honeycomb radiator mounted under the nose of the fuselage and housed in a tunnel. The usual shutters are provided for varying the amount of cooling. There are two fuel tanks, a main and a gravity tank, both mounted in the fuselage behind the fireproof bulkhead.



THE AVRO "ANTELOPE": Three-quarter front view.

Dimensions.—Following are the main dimensions of the Avro "Antelope": Length o.a., 31 ft. 2 ins.; wing span (top), 36 ft.; wing span (bottom), 32 ft.; chord of top wing, 7 ft.; chord of bottom wing, 5 ft.; total wing area (including ailerons), 377 sq. ft. Area of tail plane and elevator, 43·1 sq. ft.; area of rudder, 15·4 sq. ft.; area of fin, 4·3 sq. ft.

Weight, &c.—The structure weight of the "Antelope" is 1,350 lbs., made up as follows:—Wings, 545 lbs.; tail, 83 lbs.; undercarriage, 171 lbs.; fuselage complete, 551 lbs. The complete power plant weighs 1,337 lbs., the single items and their weights being:—Engine with airscrew boss, 883 lbs.; exhaust pipes, 11 lbs.; radiator, 71 lbs.; water (total), 97 lbs.; airscrew, 120 lbs.; petrol tanks, 44 lbs.; oil tanks, 7 lbs.; water tank, 4 lbs.; starting gear, 21 lbs.; piping, accessories, &c., 79 lbs.

The total weight of the machine empty is 2,687 lbs., and the disposable load is 1,852 lbs., giving a total gross weight of 4,539 lbs.

Performance.—When the "Antelope" is fitted with the Rolls-Royce F.XI B. engine, the performance is as follows:—Maximum speed at 5,000 ft., 173 m.p.h.; at 10,000 ft., 167 m.p.h.; at 15,000 ft., 157 m.p.h.; at 20,000 ft., 136 m.p.h. Cruising speed, 150 m.p.h. Landing speed, 60 m.p.h. Duration at cruising speed, 4 hrs.

Rate of climb at ground level, 1,470 ft./min.; at 3,000 ft, 1,520 ft./min. Time to 1,000 ft., 0·7 min.; to 5,000 ft., 3·6 mins.; to 10,000 ft., 8·2 mins.; to 15,000 ft., 15·5 mins.; to 20,000 ft., 32·3 mins. Service ceiling (*i.e.*, height at which rate of climb has dropped to 100 ft./min.), 20,700 ft. Absolute ceiling, 22,500 ft.

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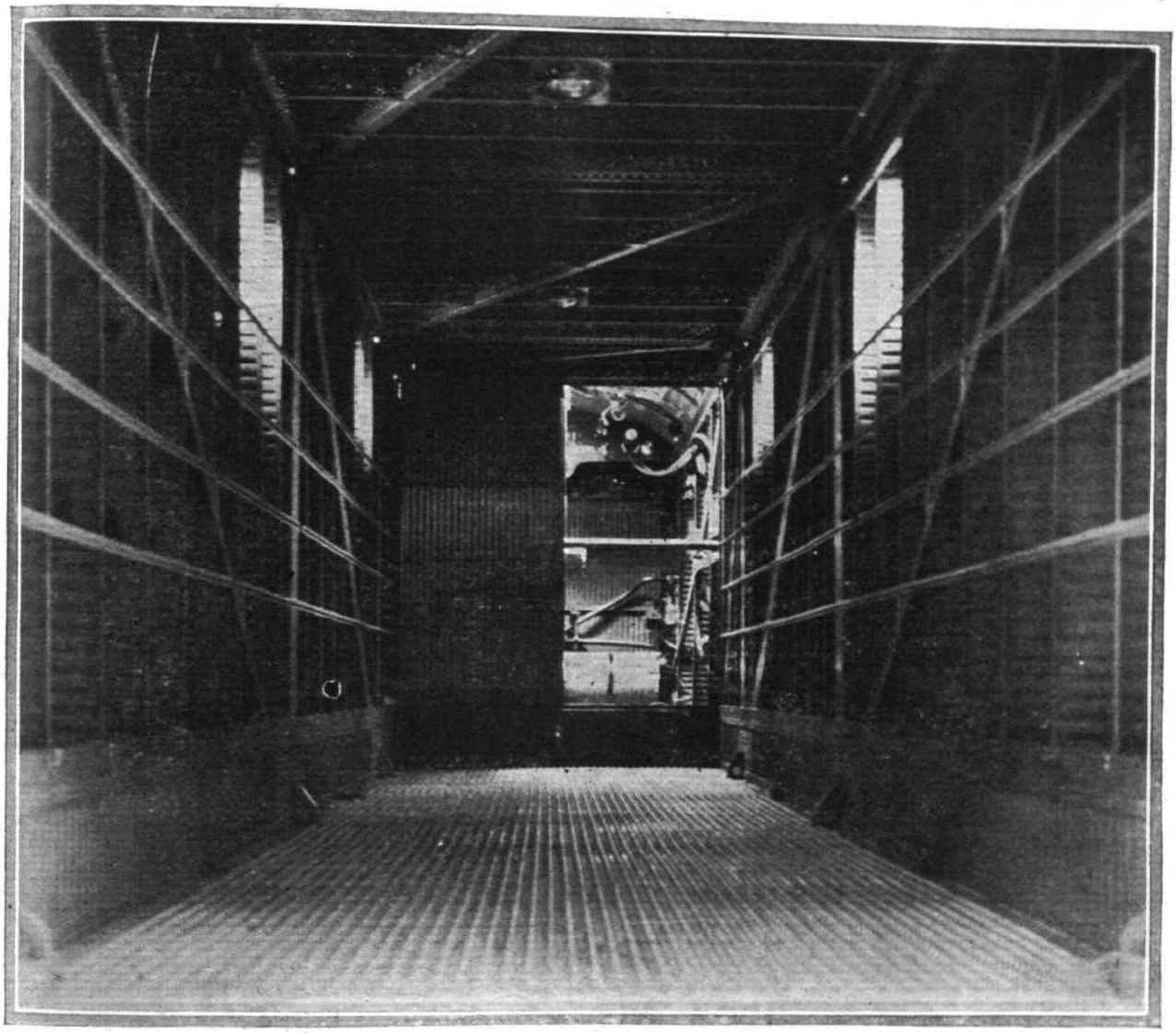
New Air Mail Leaflet

THE Postmaster-General announces that a new edition (May, 1929) of the Air Mail Leaflet giving particulars of the summer services has now been issued. It contains a map showing the principal air routes used and has an inset showing a map and other details of the new direct Air Mail service to India, which now provides facilities for sending correspondence by air to many countries. This mail now closes at the General Post Office, London, at 7 a.m. instead of 6 a.m. The leaflet shows a number of Continental Air Letter and Parcel Services which have been improved or have been resumed after suspension during the winter, and others which have been announced recently, serving Australia (air transit in Australia), Bahamas, Corsica, Cuba, Mexico and Tunis; also recent reductions of air fees for South America. The new air parcel service to Italy was due to start on the 27th instant. Parcels are sent by air to Bale and thence by train. This service should provide a gain of several days over the ordinary route for parcels to all parts of Italy. Copies of the new leaflet and inset may be obtained from any Post Office. It is in stock at the larger offices and where it is not in stock it can be obtained at short notice.

Night Air Mail Service to Scandinavia

COMMENCING on May 30 last, the air mail for Amsterdam—which closes in London at 11.30 a.m.—now connects every day, except Saturday and Sunday, with a new night air service via Bremen to Scandinavia and Finland. The mail is due to reach, on the following day, Bremen at 3.30 a.m.; Copenhagen at 6 a.m.; Gothenburg at 8.50 a.m.; Stockholm at 9.45 a.m.; Oslo at 11.15 a.m.; and Helsingfors at 1.30 p.m. This service offers a gain of a full day over the ordinary route for Bremen, Denmark, Sweden and Norway and over two days for Finland.

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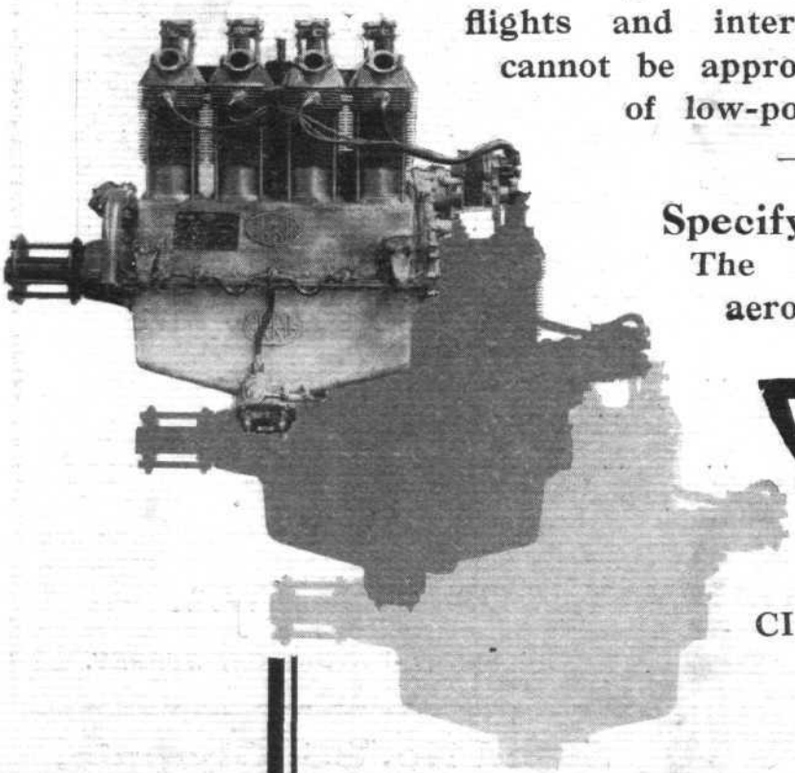
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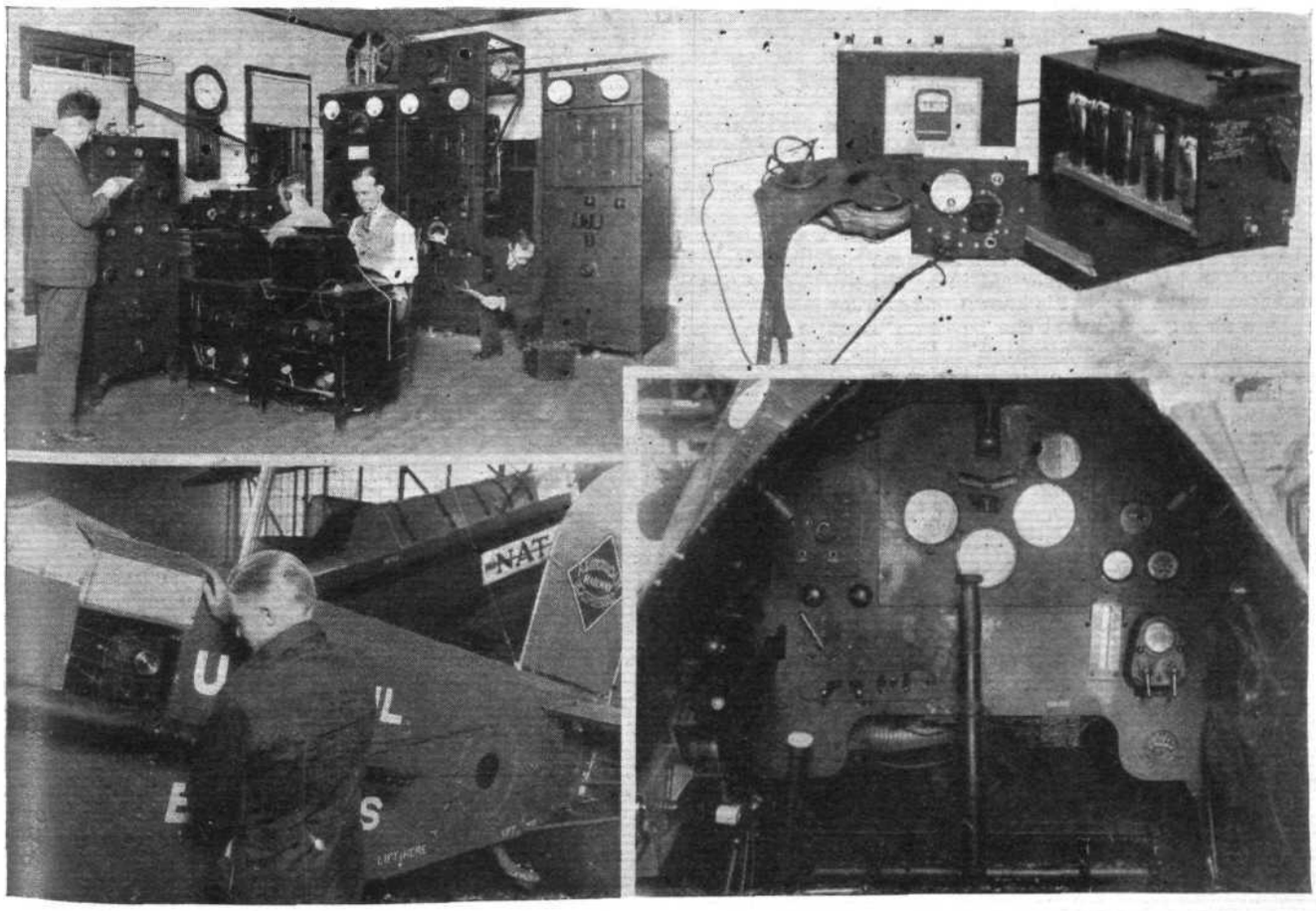


RADIO and the MAIL PLANE

HOW WIRELESS HELPS AMERICAN AIR MAIL SERVICES

ONE of the first practical applications of radio as a means of solving the problem of aviation's greatest foe—bad weather—has been made by National Air Transport, Inc., operator of the Chicago-Cleveland-New York and Chicago-Kansas City-Dallas air mail and express lines. 'Planes of this company flying the mail on the Cleveland-New York Division are already equipped with directional and ground to 'plane receiving sets, and all other ships of the company's extensive fleet are having the new equipment installed at the Chicago Divisional Repair Shops as rapidly as possible. One of these machines, a Douglas DAM-4 type mail 'plane so equipped is shown in the illustration at the top of this page.

The installation of the radio equipment is the culmination of a year and a-half of intensive tests carried on by radio engineers of the air transport company and of the Department of Commerce, which has resulted in the twin sciences of radio and aviation being definitely linked for the advancement of air transportation. The radio beacons at Cleveland, Bellefonte, Pa., and Hadley Field, N.J., have been erected



U.S. AIR MAILS AND WIRELESS : (1) The interior of the radio airway broadcasting station of N.A.T. air services. Here weather reports and other information are received over the teletype and broadcast to the pilots in flight. (2) Radio equipment for mail and express plane, showing pilot's helmet and earphones, the switchboard, the receiving set and battery. (3) The set is installed in the fuselage aft of the pilot's cockpit, from where it is operated by remote control shown in (4), the switchboard being located on the left.

and maintained by the Lighthouse Division of the Department. Additional radio beacon stations will soon be in operation on the Chicago-Cleveland Division of the transcontinental airway so that airmen can be guided by radio over the entire distance from New York to Chicago.

The radio beam along the Eastern Division is broadcast by transmitters known as equi-signal beacons. The principle upon which these transmitters work is the employment of two cross loops, each radiating a characteristic signal. These signals interlock and form another signal along the bisector of the planes of the loops, and when this signal is heard by the pilot in flight he knows he is following his designated course.

For example, the pilot hears a dot and a dash and he knows he is on the left of the course. He swings over and hears a dash and a dot and knows by that that he is on the right of the course. He turns back to the left a little and when the dots and dashes blend into one dash he knows he is following the correct path of the airway.

Because the loop transmitters are used instead of the conventional type of vertical antenna system is the reason given by experts why the beacon radio waves can be concentrated in one direction along the course. The power generally used in transmission is 500 watts.

Weather reports are transmitted to the pilot through means of the voice transmitters from the ground stations to the 'plane. A different type of transmitting apparatus, tuned to a higher wave-length, is used for this voice transmission, which has been the subject of much intensive study and experimentation. Ordinarily, the pilot is given hourly weather reports, but in event of a severe weather change ahead of him the radio beacon can be interrupted as a signal for him to tune to a higher wave-length to receive voice transmission. This he can easily do by switching a remote tuning control in the cockpit which adjusts the receiving set placed in a small compartment just to the rear of his seat. The vertical mast antenna is attached to the fuselage about midway to the tail surfaces. Other equipment consists of earphones, a volume control on the instrument board and batteries.

Either code or voice is transmitted one way—from the ground to the 'plane—at present, but a device is being perfected by which two-way communication will be possible. All N.A.T. ships will eventually be equipped with this improvement.

In thick weather the pilot can determine the proximity of an airport where a beacon is located by the narrowing path of the radio beam. The radio beam, like a beam of light, spreads sometimes to the width of two or more miles near the end of its effective path. Conversely, it converges nearer its origin. Thus the pilot can tell when nearing a port by the intensity of the signals and the narrowing of the effective path of the beam. Further aid in locating a field in thick weather is given by what is known as a marker beacon which sends a strong signal that can be heard through the course signal and informs the pilot that he is above the field. This additional to the signal system is expected to be in general use soon.

Between two airports equipped with the directional apparatus the pilot follows the course indicated by the one he has just left for about half the distance to the next, then the beacon located at the field toward which he is headed becomes effective and he follows its converging beam through his receiving set to his destination.

It is planned to have these directional beacons located at 200-mile intervals over all lines, and thus take advantage of this new device to overcome any delay now caused by adverse weather conditions. Severe tests to which the directional and voice transmission apparatus has been subjected by National Air Transport pilots have proven their value and reliability as an aid to aerial navigation under all weather conditions.



W. L. Smith, the veteran pilot, and Superintendent of the Eastern Division of N.A.T. air lines, who made a successful test of the directional, or radio beacon apparatus, during which he flew in dense fog and rain, in spite of which he was at all times in close touch with the airport, and landed safely.

◈ ◈

Private Owner M.P.

CAPT. H. H. BALFOUR, the private owner pilot, was returned for Thanet as Conservative member during the General Election.

World Tourists

VISCOUNT AND VISCOUNTESS DE SIBOUR (daughter of Mr. Gordon Selfridge) arrived at San Francisco, on June 4, from Shanghai on board the S.S. *President*, their Gipsy-Moth being carried as ordinary luggage. They intend to start flying to New York by easy stages, afterwards returning to London, where they began their world trip in September.

Cross-Channel Air Routes

DIRECT air connections between London and nearly 100 Continental centres are shown in the new summer timetable of the cross-Channel air routes which came into operation last week-end. There are three services a day between London and Berlin, the journey by air taking only 7 hours as against 21 hours by surface transport. A special fast service between London, Brussels and Cologne is provided by Imperial Airways connection at Cologne with all parts of Central Europe, and it is now possible by leaving London at 9 a.m. on this service to reach places so far away as Vienna before dusk. No fewer than eight services a day are now scheduled in each direction between London and Paris.

◈ ◈

Aircraft and Ships' Mails

AN attempt to pick up mails from the *Leviathan*, which has sailed from Southampton for New York, will be made by aeroplanes on the other side of the Atlantic, states *The Times*.

R.A.F. Rifle Meeting

THE R.A.F. Rifle Association's ninth annual meeting began at Bisley on June 3. There are 12 challenge cups to be won, and about 250 competitors to shoot for them with rifle, automatic pistol and revolver.

An Airport for Halifax, N.S.

THE project to establish an airport at Halifax, Nova Scotia, at an initial cost of $150,000 was approved by the tax-payers in plebiscite by a majority of 1,587—2,643 for and 1,056 against.

New Director of Organisation, R.A.F.

IT was announced in the *London Gazette* of June 4 that Air Commodore Frederick William Bow-Hill had been appointed Director of Organisation and Staff Duties, at the Air Ministry, in succession to Air Vice-Marshal Sir Ivo Lucius Beresford Vesey, who is returning to Army Duty—and who holds the rank of Major-General in the Army.

"THE flight to India is a great achievement.

It is to the credit of the Air Force that it can muster such skilful and intrepid flyers, and there is a word also to be said for the machine—a Fairey monoplane—and for the Napier engine, the same as gave Great Britain her record for the fastest on land, and equalled, if it did not actually surpass, the fastest in air.

When Englishmen can make such engines as these we may still claim to be in the van of mechanical invention."

Extract from the leading article of the "Morning Post"—27th April 1929

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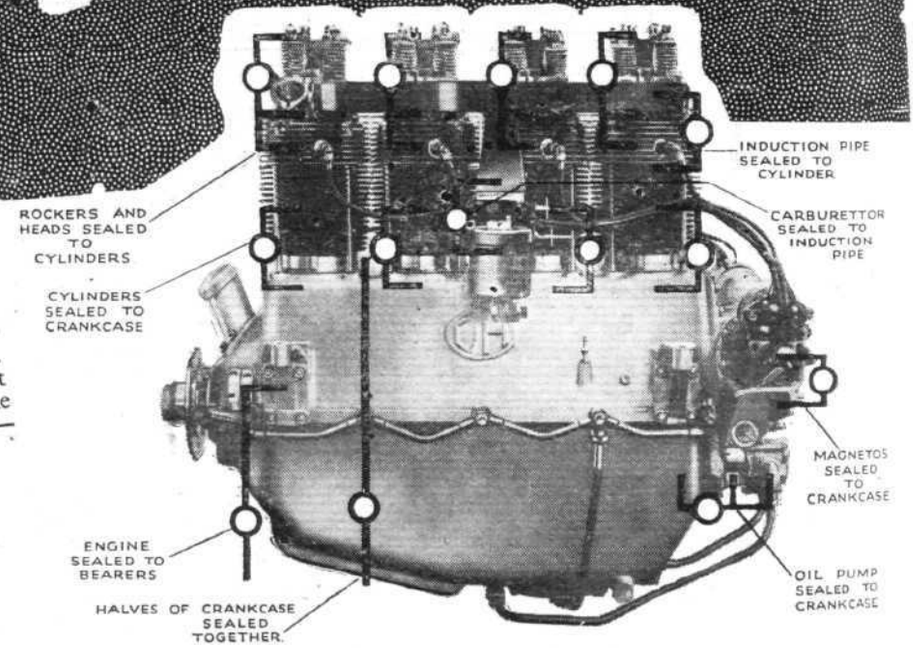
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DUPREZ CHALLENGE CUP MOTH FIRST

Bristol and Wessex Aero Club Meeting, May 26th. Pilot, Mr. A. S. Butler, flying his privately owned Moth Coupé gained 48 out of a possible 55 points. The Competition was to demonstrate safe flying during the course of normal manœuvres and aerobatics and included a loop at a height exceeding 1,500 feet—one optional evolution to be previously declared to the judges—landing tests, etc. Other well-known makes of light aircraft were competing.

SILVER CUP MOTH FIRST

Whitsun Meeting of the Northamptonshire Aero Club, May 20th. Pilot, Mr. A. C. M. Jackaman, flying his privately owned Moth Coupé, obtained 44 out of a possible 50 points. The object of the Competition was to demonstrate good and safe flying under all circumstances and included tests in take-off—turn after take-off—approach—landing, etc. Other well-known makes of light aircraft were competing.

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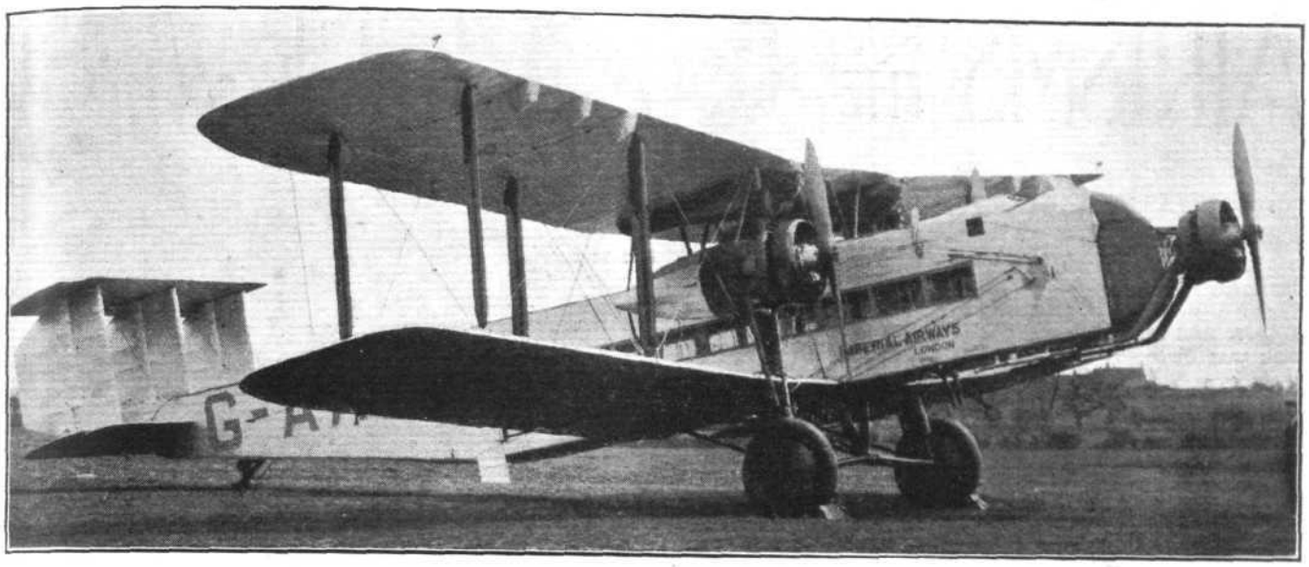
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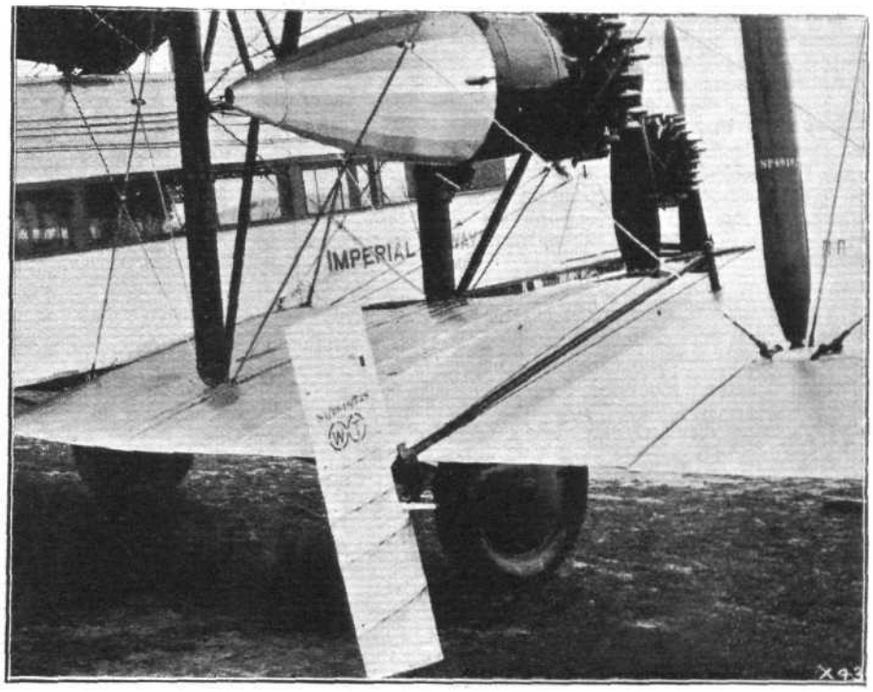
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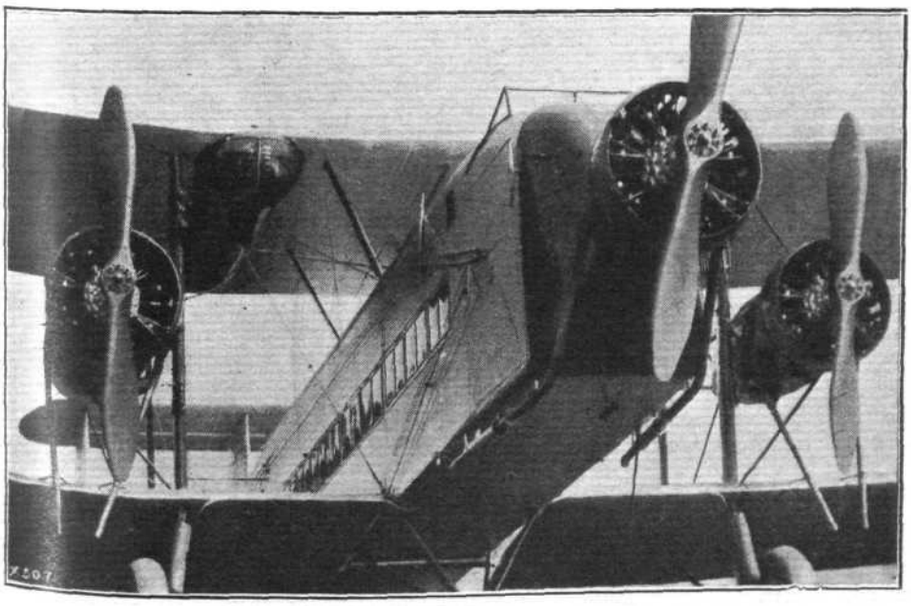
THE NEW "ARGOSY"



IN our issue for March 14 last we gave some brief particulars of the new and improved version of the Armstrong-Whitworth "Argosy" air liner, which is now being put into service by Imperial Airways. This week we publish three photographs of one of these machines, in which some of the new features are shown. Our top illustration is a view of the complete machine, from which it will be seen that the new "Argosy," in general appearance, follows the original "Argosy" air liners which have been giving such excellent service on the London-Continental air route during the last three years. Points of interest to note in this view are the neat engine cowlings, with Townend rings, and the Handley Page slots.

The new "Argosies" are fitted with three geared Armstrong-Siddeley "Jaguar" engines, resulting in a greatly improved performance. Installing the geared "Jaguars" not only increases the cruising speed, but also enables the machine to carry a greater paying load. The cabin has accommodation for 20 passengers,





and when carrying fuel for 3½ hours, wireless and full passenger equipment, the machine has a useful load of 5,000 lbs.

The cruising speed of this "Argosy" is 95 m.p.h., at which speed the petrol consumption is 65 gallons per hour. The tanks—which may be seen, on the upper plane, in our top and bottom illustrations—have a capacity of 360 gallons, which gives an endurance of 5½ hours. The machine can take off with full load in 200 yards and will fly easily on any two engines at an altitude of 2,000 ft.

We understand the controls are particularly light and effective, and a point of interest in this connection is the fitting of servo control for the ailerons. This servo rudder, which is seen in the centre illustration, is mounted on the lower plane as shown, and can be adjusted by the pilot.

AIRISMS FROM THE FOUR WINDS

Atlantic Flights

Two attempts to start an Atlantic flight from Old Orchard, Maine, on May 29, failed. The French machine, Bernard monoplane (Hispano-Suiza engine) flown by M. Lefevre and M. Assolant, took off successfully, but a petrol leak was discovered in a few moments and after dumping their large volume of petrol into the sea, the pilots landed. The American monoplane a Bellanca (Hispano Suiza) failed to rise and damaged its undercarriage. Both machines are ready again and waiting for favourable weather. Mr. Roger Williams and Mr. Lewis Yancy comprise the American crew.

Proposed Atlantic Flight

Capt. Conduret will shortly make an attempt to fly the Atlantic from Seville. He has chosen Seville because long-distance flights are at present forbidden in France.

French Far East Venture

The French airmen, Capt. Arachart and Comm. Rignot, who are flying from France to the Far East, in a Breguet aeroplane, left India for Tokyo on June 1.

The Northern Air Route

The American airmen, Mr. B. Hassell and Mr. Cramer, propose to make a second attempt to fly from America to Sweden by the northern route which touches at Greenland and Iceland, whilst Swedish airmen, with Capt. Ahrenberg in command, propose to fly in the opposite direction to Canada. He will use a Junkers monoplane fitted with three Junkers LV 360 h.p. engines. The understood object of these attempts is to prove that the northern route is the best for future Transatlantic aircraft.

Honour for Australian Pilot

Capt. Leslie Joseph Brain, who discovered the late Lieut. Anderson and Mr. Hitchcock and the Australian officers, Flight-Lieut. Moir and Flying Officer Owen, has been awarded the Air Force Cross by the King for his services. Moir and Owen arrived at Brisbane on May 31 and were enthusiastically welcomed.

India Air Mail

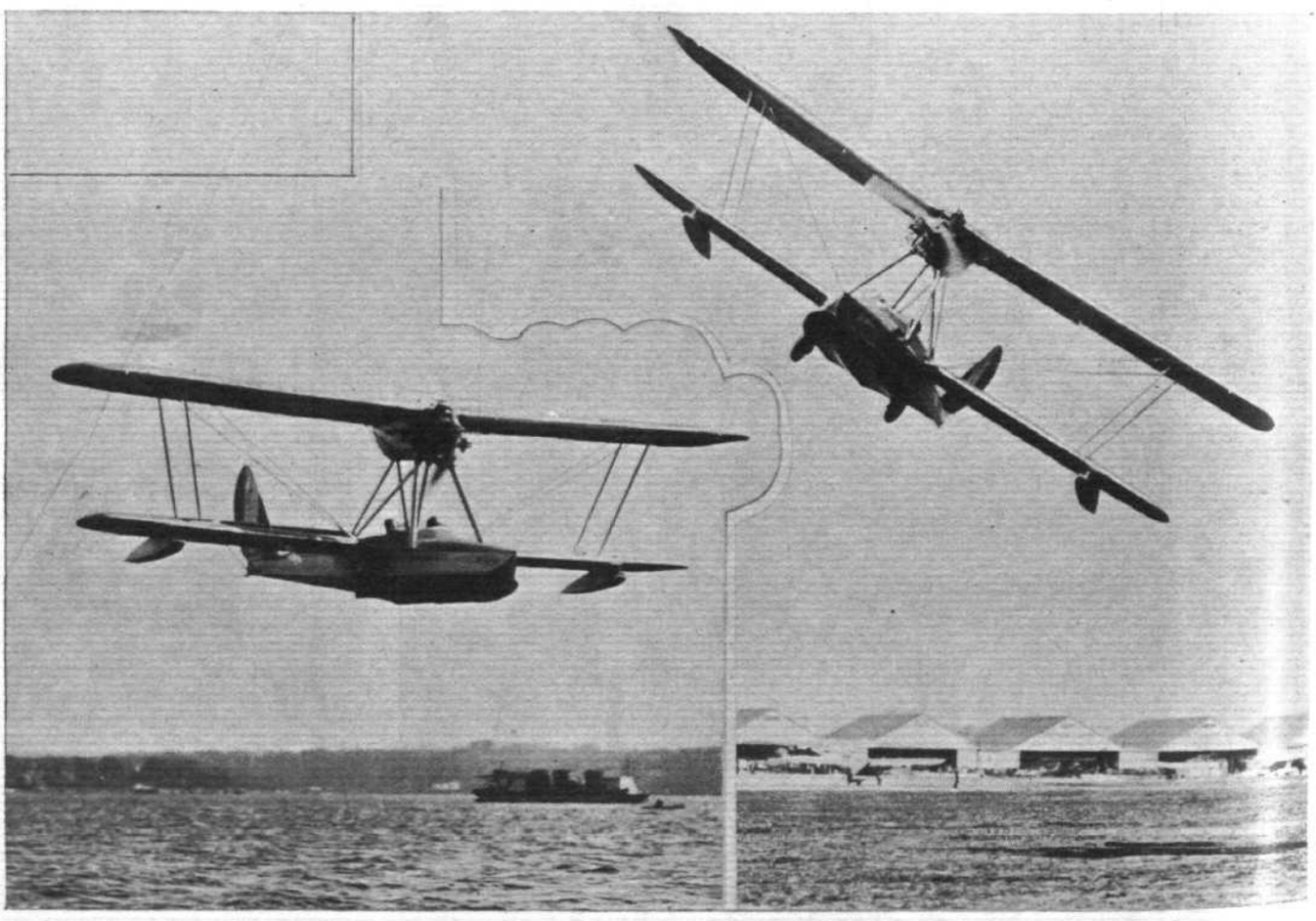
The air mail liner *City of Baghdad* arrived at Karachi on June 1, two hours late owing to strong head-winds. This is only the second time the air mails have been late. The delay did not affect the delivery of the mails or the despatch of the various trains, as the mail-sorting is now carried out *en route*. The air liner carried one English passenger, who arrived for a month's shooting trip in Kashmir.

Aviation Commission

Lieut.-Col. F. C. Shelmerdine, Director of Civil Aviation in India, is flying on the India Air Route from Karachi to Paris this week, to attend the meeting of the Aviation Commission.

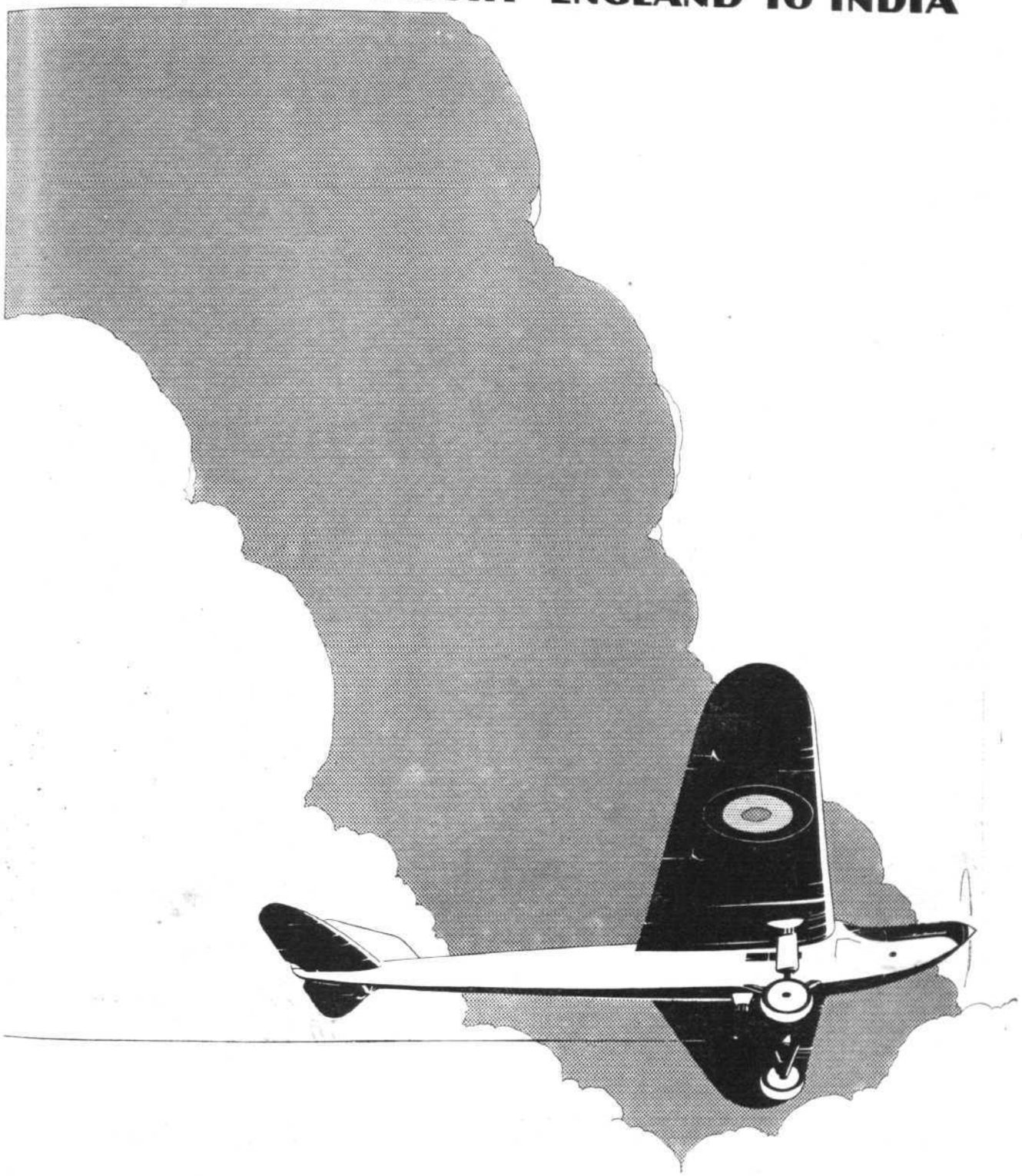
Capt. F. T. Courtney

It is reported that Capt. F. T. Courtney, the well-known test pilot, has taken out his papers for American citizenship. He has been in America, states the same report, since last October.



A NEW ITALIAN-AMERICAN AMPHIBIAN : Two views of the American Savoia Marchetti "S.56." The well-known Italian Savoia machines are being constructed in America by the American Aeronautical Corporation of New York. The "S.56" is a three-seater "Baby" amphibian equipped with an American engine of 100 h.p. It has an overall span of 34 ft. 1½ ins. and a speed range of 38-92 m.p.h. Dual control is fitted, so the machine is equally suitable for instruction work or passenger carrying.

FIRST NON-STOP FLIGHT - ENGLAND TO INDIA



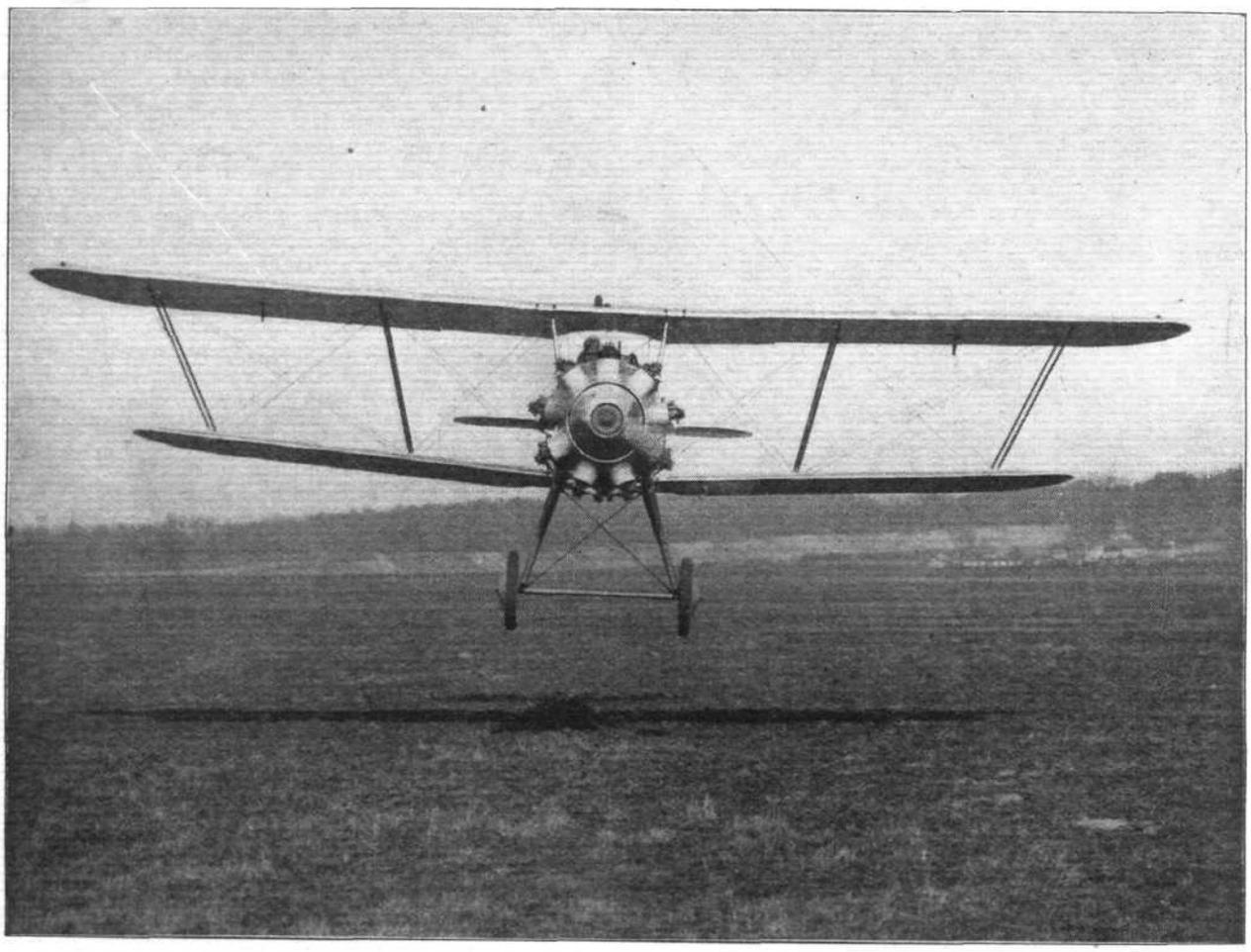
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["FLIGHT" *Photograph*]

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A New Canadian Aircraft Factory

A COMPANY is being formed for the erection at Vancouver, B.C., of a factory for the production of aeroplanes. The company will be known as the Boeing Aircraft, Ltd., of Canada, which will have exclusive manufacturing rights for the various types of aircraft designed by the Boeing Airplane Co., of Seattle, Wash. Canadian materials will be used in the construction, and engines will be obtained from the Montreal factory of the Pratt and Whitney Co., of Canada, Ltd.

American Army Manœuvres

THE *Daily Telegraph* reports that one of the chief lessons of the elaborate American army manœuvres in Ohio, which have ended, according to the decision of the military observers, is a better appreciation of the striking power of aircraft, both in bombardment and attack. The 200 'planes employed in the "combat" demonstrated that their concentrated fire power was many times greater than that of a whole division of infantry and supporting artillery. The manœuvres were not intended to determine whether the attackers or the defenders of the city of Columbus were superior, but were for the purpose of training staffs in the field. Had the operations been real war, however, it is declared, the attacking forces would have won, mainly because they were supported by new attack 'planes, which the defenders lacked.

Maidenhead Aerodrome

THE Maidenhead aerodrome, which is owned by Messrs. Donald Stevenson and Co., is to be officially opened on Saturday, June 8, and His Worship the Mayor of Maidenhead, who will be supported by Members of the Council, is to open the meeting at 2.30 p.m. The flying arrangements are being organised by the Brooklands School of Flying and will consist of passenger flights from 5*s*. and exhibition flights. Amongst the pilots who have promised to help with the programme are Capt. G. de Havilland, F.R.Ae.S., A.F.C., designer of the "Moth" light aeroplane, Capt. H. Broad, A.F.C., chief test pilot of the de Havilland Aircraft Co., Capt. H. D. Davis, A.F.C., managing director of the Brooklands School of Flying, Capt. E. A. Jones and Major C. M. Pickthorn, M.C., instructors of the Brooklands School of Flying. This aerodrome lies adjacent to the main Windsor-Maidenhead road and is about 1 mile short of Maidenhead; the entrance to the public enclosure is close to the main road and will easily be found by means of direction arrows. There will be a refreshment tent and facilities for cars.



["FLIGHT" *Photograph*

H.R.H. Prince Bertil (left) and H.R.H. Prince Carl Johan, sons of the King of Sweden, at Stag Lane Aerodrome recently. They inspected the De Havilland Aircraft Co., Ltd., works and were taken for flights by Capt. A. S. White in the Gipsy-Moth.

BIRTHDAY HONOURS

THE following are included in the official list of Honours conferred by His Majesty the King on the occasion of his 64th birthday :—

Order of the Bath

C.B. (Military Division)

Air Commodore Cyril Louis Norton Newall, C.M.G., C.B.E., A.M., R.A.F.

C.B. (Civil Division)

Christopher Llewellyn Bullock, Esq., C.B.E., Assistant Secretary, Air Ministry.

Order of St. Michael and St. George

G.C.M.G.

Lieutenant-Colonel Sir Maurice Pascal Alers Hankey, G.C.B., Secretary to the Cabinet and Committee of Imperial Defence, Clerk of His Majesty's Most Honourable Privy Council.

Sir John Cadman, D.Sc., M.I.C.E., K.C.M.G., Emeritus Professor of Birmingham University, Chairman of the Anglo-Persian Oil Co., Director of the Suez Canal Co., Member of the Council of the Department of Industrial and Scientific Research (Privy Council), and Chairman of the Inter-Allied Petroleum Council.

K.C.M.G.

Lieutenant-Colonel Sir Francis Henry Humphrys, G.C.V.O., K.B.E., C.I.E., H.M. Envoy Extraordinary and Minister Plenipotentiary at Kabul. Sir F. H. Humphrys entered the Political Department of the Government of India in 1903, becoming Deputy Foreign Secretary to the Government of India in 1921. During the European War he served in Europe as a pilot in the Royal Air Force. His tact and skill were largely responsible for the successful evacuation by air of Europeans from Kabul, during the recent trouble there, which led ultimately to his own departure.

Order of the British Empire

(Military Division)

O.B.E.

Wing Commander Kenneth Caron Buss, R.A.F.

Squadron Leader (Honorary Wing Commander) Edgar Huntley, M.B., B.S., R.A.F.

Squadron Leader Robert Dickinson Oxland, R.A.F.

M.B.E.

1284 Sergt.-Major, 1st Class, Francis Talbot Parker, R.A.F.

777 Sergt.-Major, 1st Class, Charles William Goodchild, R.A.F.

7296 Sergt.-Major, 1st Class, Harry Wood, R.A.F.

48814 Sergt.-Major, 2nd Class, Charles Ernest Turner, R.A.F.

(Civil Division)

C.B.E.

Captain Robert Sutherland Rattray, M.B.E., for services as Government Anthropologist in the Gold Coast and to aviation in West Africa.

M.B.E.

Miss Lucy Ovens, Personal Assistant to the Secretary of State for Air.

Robert Henry Scanes Spicer, Esq., General Secretary, Society of Motor Manufacturers and Traders.

Imperial Service Order

Frank Robert Stapley, Esq., O.B.E., Assistant Director of Contracts, Air Ministry.

Awards to Airmen

The King has been pleased to approve of the following awards to the undermentioned officers and airman of the Royal Air Force :—

Air Force Cross

Squadron Leader Albert Peter Vincent Daly. Flying Officer Leonard Butler (since deceased).

Air Force Medal

6428 Flight-Sergeant (Pilot) Bernard Crane.

PRIVATE FLYING



A Section of FLIGHT in the Interests of the Private Owner, Owner-Pilot, and Club Member

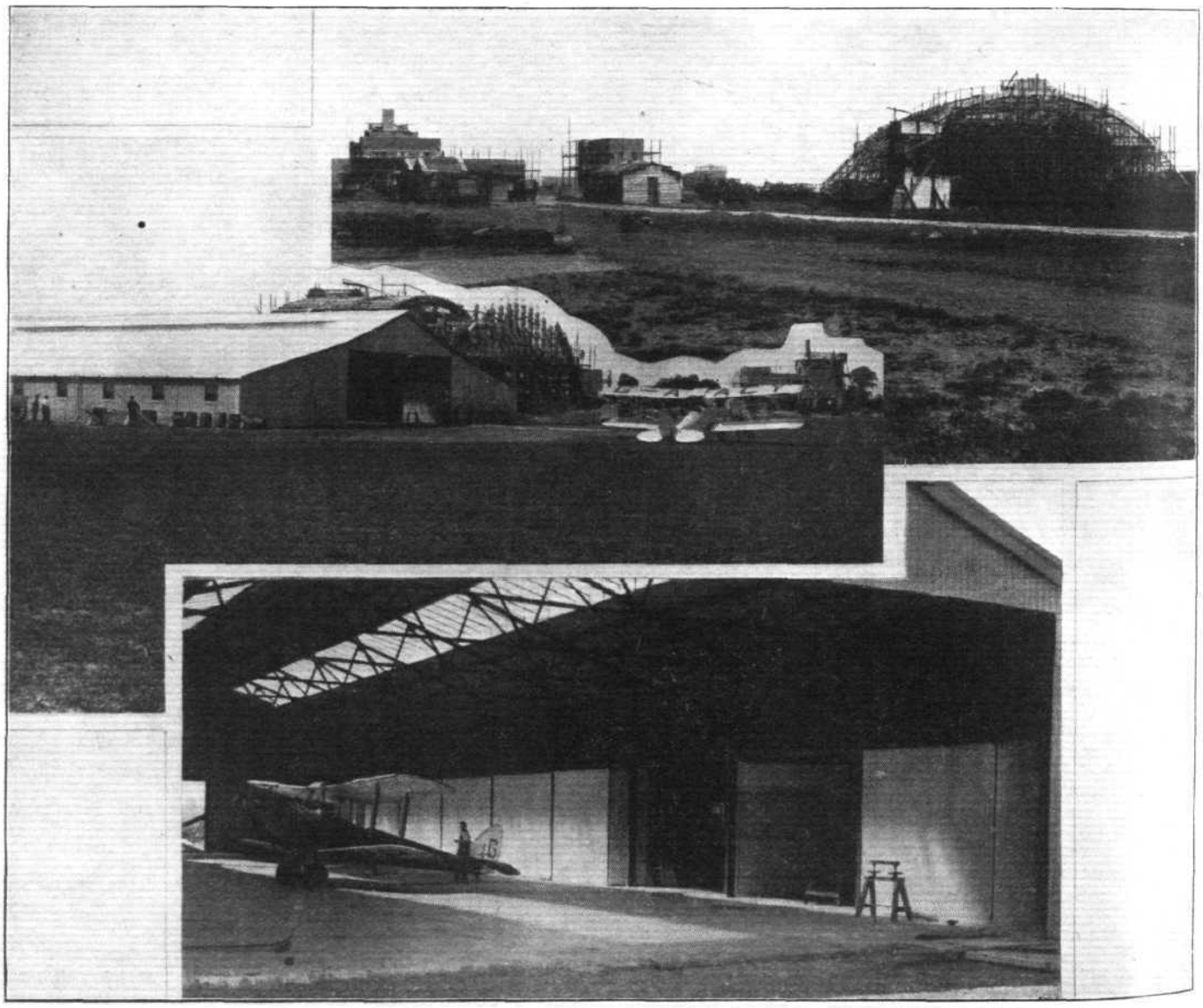
LONDON'S NEW PRIVATE AERODROME

Heston Air Park Nearly Completed

THE aerodrome plans of Airwork, Ltd., which FLIGHT detailed last October, are now nearing completion at the Heston site close to Hounslow, Middlesex. Heston Air Park, as it is definitely styled, is now a fixed and distinct landmark on that flat country off the Great West Road about 10 miles west of London. You can at once observe the fine potentialities of this site and its surrounding country for constant aircraft traffic, and with what shrewd judgment and vision the directors of Airwork, Ltd., have prepared it. It is alone a remarkable fact that such a site should have been found within so short a distance of London in view of the long and extensive building developments radiating in all directions from the city.

The locality surrounding the Heston aerodrome will, as far as one can visualise, preserve its advantageous openness and flatness, thereby attaching, as it were, so much useful area to the actual landing field. A landing from almost any direction should hardly tax the skill of even the amateur. There is, incidentally, a tall and fascinating factory chimney some distance to the north for the pilot who *must* hit the only obstruction within sight, as so humorously expressed in Mr. Ernest Noble's drawing in a recent issue of FLIGHT.

The surface of the aerodrome is exceptionally smooth to the eye and seems to maintain its evenness over the whole area. One or two bumps which adorned it originally have been sat upon.



["FLIGHT" *Photographs*

HESTON AIR PARK : (Top) On the left is the building which will contain a restaurant, club rooms, offices, and everything for the social amenities of the aerodrome. On the right is the large hangar which will have Esavian doors. (Middle) One of the lock-up garages which contains 20 lock-ups. The machine is the Airwork, Ltd., Gipsy-Moth, fitted with Handley Page slots. (Below) Interior of lock-up garage showing the sliding doors which are fitted throughout. They slide round the side of each lock-up when pulled open.

A complete range of AIRCRAFT AND ENGINES

AS makers of the widest and most successful range of British aircraft and engines, the Armstrong Siddeley Development Co., Ltd., is in a unique position to offer the results of its extensive experience on matters relating to air transport, training, fighting or private flying machines on land or sea in any part of the world.

AIRCRAFT

includes the All-Steel Atlas fighter and reconnaissance machines, the All-Steel Siskin single seater fighter, the All-Steel A.W.14 high performance fighter and the Argosy Air-liner.

ENGINES

include the 700-750 h.p. Leopard, the 460-500 h.p. Geared Jaguar, the Supercharged Jaguar, the 230 h.p. Lynx (geared or supercharged), the 130-140 h.p. Mongoose and the 80-88 h.p. Genet.

SASSOON CUP
Siskin-Jaguars finished
1ST. 2ND & 3RD

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Works and Aerodrome: Whitley, Coventry. London: 10 Old Bond Street, W.1

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Making Armstrong Whitworth Steel Wings

Over a thousand men are building steel aircraft at the Whitley Works of Sir W. G. Armstrong Whitworth Aircraft Limited.

Four other Aircraft Manufacturers are building similar aircraft under licence from Sir W. G. Armstrong Whitworth Aircraft Limited.

Armstrong Whitworth steel aeroplanes were the first steel aircraft to be used in quantity and manufactured in series.

They have been standardised as the single seater fighters of the Royal Air Force and have been in production for over six years.

Armstrong Whitworth spars have shown no deterioration in this period.

Steel is stronger, safer and surer in service than any other metal.

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Making Armstrong Siddeley Air-cooled Aero Engines

Armstrong Siddeley Motors Limited are pioneers of the high-powered air-cooled aero engine.

Their range of engines is the most complete and most universally satisfactory in service. It includes engines of 750, 460, 230, 130 and 80 h.p.

Armstrong Siddeley designs have been in the forefront of development for the last ten years.

Their many patented features such as cylinder head, cylinder locking ring, epicyclic gearing and supercharger have proved their value under the severest conditions.

For the greatest reliability and the most enduring economy at home or overseas, on land or sea, fit an Armstrong Siddeley air-cooled engine.

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THE VALUE of STANDARDISATION

Most of the important parts of the Armstrong Siddeley Jaguar, Lynx and Mongoose engines are interchangeable.

On the 460-500 h.p. Jaguar, 215-230 h.p. Lynx and 130-150 h.p. Mongoose the cylinders, pistons, piston rings, gudgeon pins, gudgeon pin bushes, auxiliary connecting rods, valve gear and rockers, thrust race and carrier, main bearings and propeller boss, and many minor details are identical.

On the Jaguar and Lynx engines, in addition to the above parts, the oil pump, bearer plate, induction case, master rod, front cover and timing gear are also interchangeable.

Where several of these engines are simultaneously in service this high degree of standardisation effects great economy in spare parts, personnel, and care and maintenance charges.

The 460-500 h.p. 14 cylinder Jaguar, 215-230 h.p. 7 cylinder Lynx and 130-150 h.p. 5 cylinder Mongoose in single, dual or triple form cover a very wide field of flying requirements.

ARMSTRONG SIDDELEY
MOTORS LIMITED
COVENTRY



["FLIGHT" *Photograph*

The co-directors of Airwork, Ltd., Mr. F. A. I. Muntz (left), and Mr. N. St. V. Norman, both experienced private owners, whose new aerodrome at Heston will be ready shortly for aircraft traffic.

The Buildings

Airwork, Ltd., has used commendable judgment in the placing of their buildings. They are concentrated on the south side of the field and use the minimum amount of space, thereby barely intruding on the landing area. But they are not cramped, neither do they offer any hidden obstruction to landings from the south side. The concentration of buildings means convenient communication.

They also are placed where room for extension is available, again without diminishing the landing area.

The main entrance is a wide concrete road leading from Cranford Lane at short distance to the central building, where the social and administrative sections will be housed. In its architecture this building has a strong tendency in straight lines and sharp right angles, after the style of a fort, but if this description conveys at present the impression of a severe style for an aerodrome structure the finished building will be very attractive. On each side of the central tower are flat roofs from which the members and patrons of the aerodrome will watch the flying. There will be a restaurant, lounge and administration offices, besides other necessary rooms.

The Household Brigade Flying Club will have one section and use Heston as its flying headquarters.

In front of the central building are two small houses in harmony with the larger setting and flanking the entrance road. These will come into use for such officials as caretakers, etc. On the right of this group is the large central hangar and workshop describing an arc of 100 ft. span which will be fitted with Esavian doors. In the centre of this hangar machines will be accommodated, with workshops along the sides. Above, there will be offices. A petrol tank will be fitted on the higher level feeding the ground pumps for filling the machines.

A wide and lower structure is on the right of the central hangar. It holds twenty lock-ups for private-owners' machines. Between the two rows of ten lock-ups is a space of excellent width and length for working on many machines at one time under cover.

Each lock-up is fitted with the ingenious sliding doors, which are erected on runners and easily slide round to the side of the lock-up when you want the door open. There will be at least one other of these lock-up garages, accommodating twenty machines.

On the left side of the central building are three exhibition shops, which have been acquired by A. V. Roe and Co. Ltd., Malcolm Campbell, Ltd., and the Blackburn Aeroplane Co., Ltd., respectively, who will exhibit the Avro "Avian," the Gipsy-Moth and the Blackburn "Bluebird."

Cost of Flying Instruction

The following are some particulars of the charges for flying which will come into operation at Heston Air Park :—

(*a*) Flying instruction dual and solo :—The charge will be at the rate of £5 5*s*. per flying hour dual and solo, which charge shall include the cost of instruction, oil and petrol, damage to aeroplanes and third party insurance.

(*b*) Flying instruction on owner's own machine. The charge will be at the rate of £2 2*s*. per flying hour, which charge will cover the cost of instruction only.

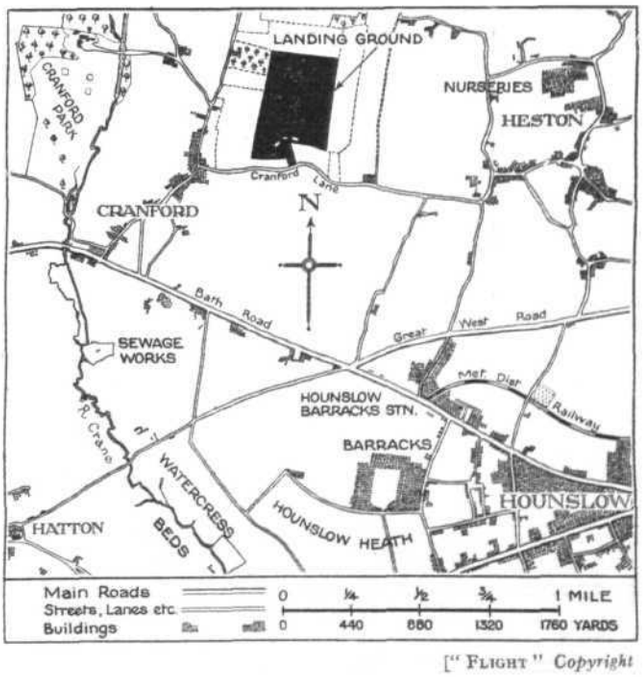
(*c*) Solo flying.—Pilots of 25 hours' solo flying experience in possession of an "A" licence can obtain solo flying practice within a 3-mile radius of the Air Park at £3 10*s*. per hour, subject to approval of the Airwork Chief Instructor. This charge shall include the cost of oil, petrol, damage to aeroplane and third party insurance.

(*d*) "A" licence pilots of over 100 hours' flying experience and "B" licence pilots, subject to approval of the insurance company can obtain Airwork machines for cross-country flying at £3 10*s*. per hour, and can hire Airwork machines by the day or week at special rates. These charges shall include damage to aeroplanes and third party insurance.

The company accepts responsibility for damage to their aeroplanes and legal liability for damage to third parties, except where such damage to aeroplanes or to third parties is caused wholly, or in part, by a wilful breach of the Rules of the Air Park.

The Company does not accept any liability for any injury or damage sustained by pilots hiring aeroplanes for solo, passenger or instructional flights; and before any pilot shall be entitled to hire an aeroplane for the purpose of flying, he or she will be required to sign an undertaking exempting the company and its employees from all liability for injuries or damage sustained by the pilot or passenger. In the case of a pilot or passenger under the age of 21 years, such undertaking must in addition be signed by the parent or guardian of such pilot.

There can be no doubt that flying instruction by Airwork, Ltd., will be of a high standard, for they have engaged Capt. V. H. Baker, M.C., A.F.C. who was until recently chief instructor of the London Aeroplane Club, and chief instructor of the Lancashire Aero Club prior to that. He has been flying continuously for thirteen years. His experience has included teaching Dutch pupils to fly on Avros, when the only mutual language was a matter of physical signs, yet those pupils picked up the art as quickly as though they had a common language with their instructor. Capt. Baker also went to Chili for Messrs. Vickers, Ltd., with Wibault machines. Remaining work on the aerodrome at Heston is going forward quickly in preparation for the King's Cup and Siddeley Trophy Races, which will start and finish there on July 5 and 6 respectively. Airwork, Ltd., directors are, as our readers already know, two experienced private-owner pilots, Mr. Nigel Norman and Mr. F. A. I. Muntz.



["FLIGHT" *Copyright*

Heston Air Park, Hounslow, Middlesex.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware, Sec., H. E. Perrin, 3, Clifford Street, London, W.1.
Bristol and Wessex Aeroplane Club, Filton, Gloucester. Secretary, Major G. S. Cooper, The Aerodrome, Patchway, Glos.
Cinque Ports Flying Club, Lympne, Hythe. Hon. Secretary, R. Dallas Brett, 114, High Street, Hythe, Kent.
Hampshire Aero Club, Hamble, Southampton. Secretary, H. J. Harrington, Hamble, Southampton.
Lancashire Aero Club, Woodford, Lancs. Secretary, Mr. Atherton, Avro Aerodrome, Woodford.
Liverpool and District Aero Club, Hooton, Cheshire. Hon. Secretary, Capt. Ellis, Hooton Aerodrome.
Midland Aero Club, Castle Bromwich, Birmingham. Secretary, Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.
Newcastle-on-Tyne Aero Club, Cramlington, Northumberland. Secretary, John Bell, Cramlington Aerodrome, Northumberland.
Norfolk and Norwich Aero Club, Mousehold, Norwich. Secretary, G. McEwen, The Aerodrome, Mousehold, Norwich.
Nottingham Aero Club, Hucknall, Nottingham. Hon. Secretary, Cecil R. Sands, A.C.A., 30, Park Row, Nottingham.
The Scottish Flying Club, 101, St. Vincent Street, Glasgow. Secretary, George Baldwin, Moorpark Aerodrome, Renfrew.
Southern Aero Club, Shoreham, Sussex. Secretary, Miss N. B. Birkett, Shoreham Aerodrome, Sussex.
Suffolk Aeroplane Club, Ipswich. Secretary, Maj. P. L. Holmes, The Aerodrome, Hadleigh, Suffolk.
Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Secretary, Lieut.-Col. Walker, The Aerodrome, Sherburn-in-Elmet.

LONDON AEROPLANE CLUB

(MAY 26–JUNE 1).—Instructors: Maj. H. G. Travers and Captain F. R. Matthews. Ground engineers: C. Humphreys and A. E. Mitchell. Aircraft: The following machines were in commission, G-AABL, G-AABN, G-EBZC and G-AAEX. Total flying time for the week: 82 hrs. 40 mins. Dual instruction: 32 members received dual instruction, the time being 40 hrs. 5 mins. Solo flying: 29 members flew solo, the time being 42 hrs. 35 mins. G. Gibbins and E. Davis completed their tests, during the week, for "A" licences. W. V. Williams made his first solo flight.

Pilot Instructor: Captain F. R. Matthews has now returned to his duties as pilot instructor.

Record Flying Month.—The flying time during the month of May constitutes a record for the club, viz., 337 hrs. 25 mins. The previous record was in September, 1928, viz., 305 hrs. 15 mins.—Dual: (303), 134 hrs. 30 mins.; solo: (350), 156 hrs. 30 mins.; passengers: (73), 28 hrs. 50 mins.; tests: (105), 17 hrs. 35 mins.; total: (831), 337 hrs. 25 mins.

BRISTOL & WESSEX AEROPLANE CLUB, LTD.

(MAY 26–JUNE 1).—Pilot instructor: E. W. B. Bartlett. Ground engineer: A. W. Webb. Machines in commission: (2), TV, YH. Flying time for the week: 37 hrs. 35 mins. Pupils instructed: (16), 20 hrs. 5 mins. Soloists instructed: (6), 5 hrs. 35 mins. Licensed pilots flying: (6), 8 hrs. 55 mins. Passengers carried: (21), 6 hrs. 35 mins.

The chief event of the past fortnight has been the competition for the Desprez Cup on the 26th. This was a thoroughly enjoyable afternoon and we cordially thank all our visitors, both those who arrived by air and those by car, for coming to help make the occasion a success. We also heartily thank Mr. Uwins for his splendid exhibition in a Bristol "Bulldog," which was undoubtedly the tit-bit of the afternoon. The Desprez Cup was won by Mr. Alan Butler in a Coupé "Gipsy Moth." Dr. Whitehead Reid was second in a "Genet Widgeon" and Capt. W. R. Bailey in a "Cirrus Avian" third, after a tie with Mr. Ashworth of the Nottingham Club.

Originally intended to be quite an informal afternoon's entertainment, the occasion developed into a small flying meeting. Sir Alan Cobham brought his "Giant Moth" on the Saturday and was busy giving joyrides throughout the two days. There was a fair attendance of the public and many members and their friends turned up. We had the opportunity of seeing the Klemm Monoplane demonstrated by Mr. Alliott during the afternoon. The afternoon was concluded with acrobatics by Mr. Barlett, after which Lady Apsley very kindly presented the prizes.

CINQUE PORTS FLYING CLUB

(MAY 26–JUNE 1).—Pilot instructor: K. K. Brown. Ground engineer: R. H. Wynne. Machine in commission: G-EBPM. Total time for week: 12 hrs. 45 mins. Dual: Mr. Richardson, 15 mins.; Mr. Ellis, 45 mins.; Mr. Fisher, 2 hrs.; Mr. Higgett, 1 hr.; Mr. Faudell, 30 mins.; Mr. Whittingham, 30 mins.; Mr. Hume, 30 mins.; Lieut.-Comdr. Gubbins, 1 hr.; Mr. Harber, 30 mins. Total: 9 members, 7 hrs. Soloists under instruction: Mr. Ellis, 2 hrs. 30 mins.; Mr. Richardson, 1 hr.; Mr. Fisher, 1 hr. 15 mins. Total: 3 members, 4 hrs. 45 mins. "A" pilot: Mr. K. Edgson Wright, 20 mins. Tests: (3), 30 mins.

The drop in flying hours this week was chiefly due to the weather, which stopped flying altogether on Wednesday, Thursday and Friday, and seriously interfered with flying on the Monday. As the club was closed as usual on Tuesday, the time represents only three days working.

On Saturday, Mr. H. I. Fisher, of Dover, was successfully sent solo, after 8 hrs. dual instruction, which he began a fortnight ago, on May 17. Mr. Fisher put up a very creditable performance.

On Saturday, one of our members, Mr. R. H. Law, passed through in his "Moth," YJ, en route for Le Touquet.

The month of May broke all club records by a large margin. The membership had increased, by the end of the month, to 91, of whom no less than 83 are flying members, and during this month 225 flights were made, totalling 94½ hrs., which is equivalent to nearly 5,000 miles flying. With only two machines in commission, this represents an extremely satisfactory performance and reflects the greatest credit on Flying Officer K. K. Brown and his staff at Lympne. We hope that during June, we shall again beat this record and achieve over 100 hrs. in the month, and we anticipate obtaining at least seven licences during the coming month.

HAMPSHIRE AEROPLANE CLUB

(MAY 18–24).—Pilot instructors: Flight-Lieut. F. A. Swoffer, M.B.E., and Mr. W. H. Dudley. Ground engineers: Mr. E. Lenny and Mr. J. Elliott. Aircraft: D.H. 60 Moth G-EBOH, Avro Avian G-EBVI and Spartan G-AAFR. Flying time for the week: 89 hrs. 50 mins. Pupils under instruction (23), 33 hrs. 20 mins.; soloists (7), 15 hrs. 50 mins.; "A" pilots (14), 36 hrs. 10 mins.; passengers (9), 2 hrs. 15 mins.; instructors, solo and tests (20), 3 hrs. 15 mins.

The Whitsun holidays boosted up the Club's flying time, and Monday, with 22 hrs. 45 mins., proved a record day.

Miss G. Grace, the holder of our Air League Flying Scholarship, went solo, and made a very good three-point landing, Mr. Fleming made a similar landing, but from 2 ft. The Avian objected, and the port centre section struts collapsed. However, the air in the tyres is still good. Mr. Kabali endeavoured to land from a greater height and damaged a fitting on the Spartan.

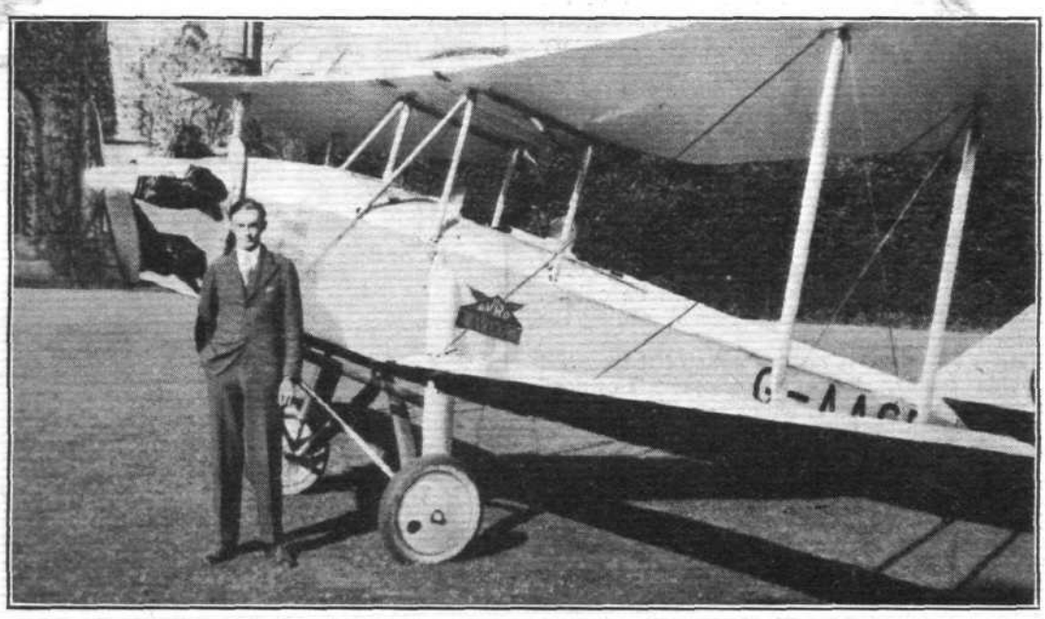
Lord Carlow, who recently joined the Club, paid us a visit, and went solo, and Lord Apsley, one of our Vice-Presidents, is taking the opportunity while spending a short time in the neighbourhood of taking dual instruction.

Messrs. Milford and Shand completed the tests for their "A" licences.

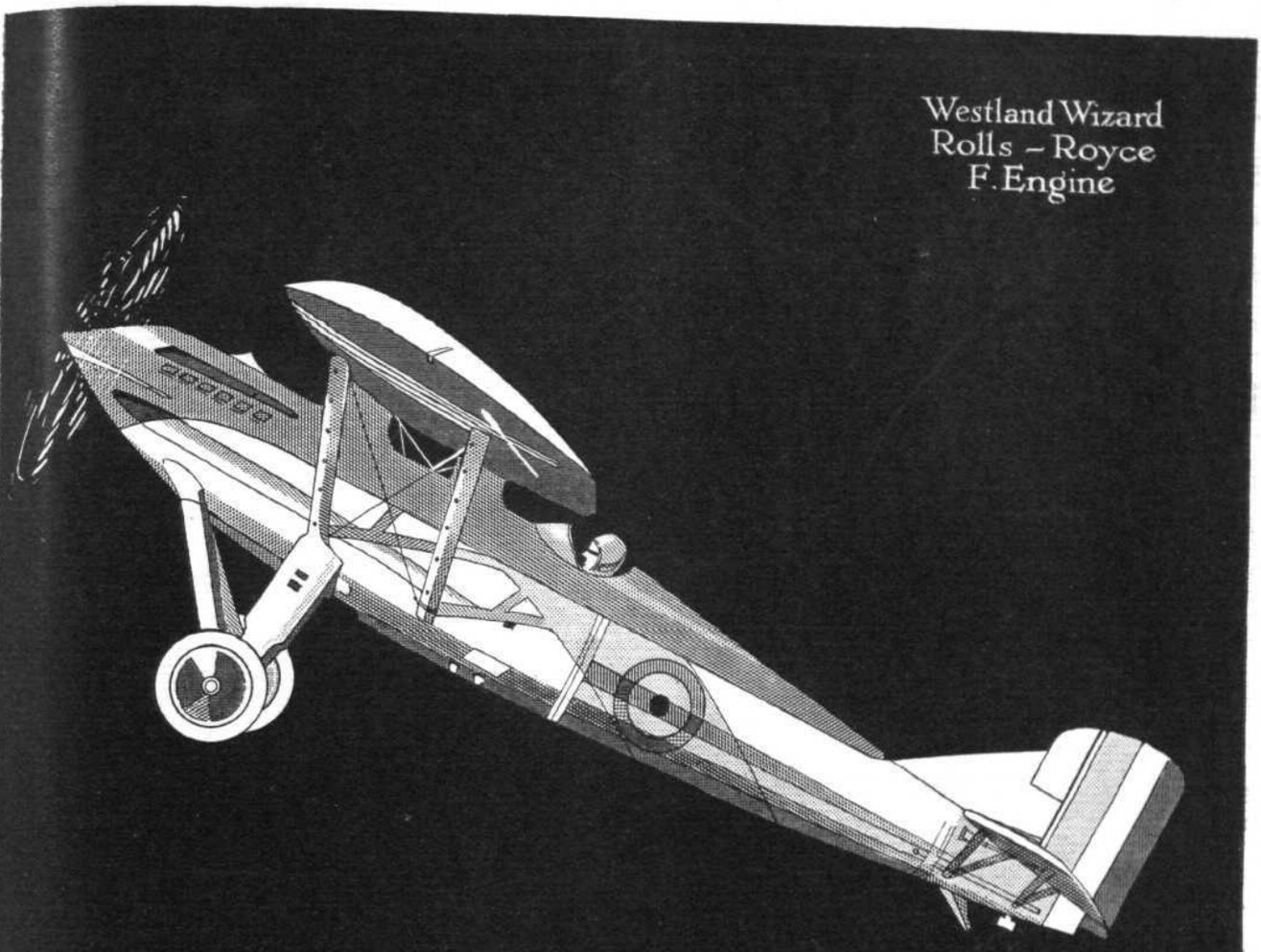
LANCASHIRE AERO CLUB

(MAY 19–24.)—Flying time: 34 hrs. 45 mins. Instruction: (15), 11 hrs. 35 mins. Solo flights: (21), 12 hrs. 40 mins. Passenger flights: (15), 8 hrs. 50 mins. Tests: (10), 1 hr. 40 mins.

Instruction (with Mr. Hall):—Lister, Russell, Serck, Forshaw, Faulkner



The Earl of March with his Avro "Avian" (Armstrong Siddeley "Genet") outside Goodwood House. The registration letters are G-AACF.



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Air Ministry Report
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Ashworth, J. H., Hindley, Dane, Kay, Garner, Greg, Foote, Paddock; (with Mr. Cantrill): Serck, Ashworth, J. H. Machines in commission, EC, KD. Soloists (under instruction): Maxwell, Goss, Serck, Forshaw, Paddock, Williamson, Foote, Sellers. Pilots:—Goodfellow, Davies, R. G., Gort, Michelson, Lacayo, Harrison, Mills, Gattrell, Garner, Hall, R. F., Meads, Weale. Passengers (with Mr. Meads): Goss; (with Mr. Williams): Miss Tyler, Mawson; (with Mr. Scholes, J. J.): Scholes, F., Miss McDowall; (with Mr. Lacayo): Hutchinson, Dowall, Goss, Miss Tonge, Miss Hulme; (with Mr. Hardy): Johnson; (with Mr. Hall, R. F.): Ashworth, J. H. Atherton; (with Mr. Harrison): Hall, R. F.

The club reopened on Thursday, after closing for the Whitsun Holidays. The weather was good, and Mr. Foote was successfully launched on his first solo. Mr. Foote also accomplished his height test, a feat emulated by Messrs. Paddock and Serck.

The *Daily Mail* "Canberra" landed at Woodford on Saturday, while on Sunday we had a visit from Messrs. Leeming and Dyson, who flew over from Wythenshawe on a Genet Avian.

The reason for QL's forced landing turned out to be a broken crankshaft. We have always had a feeling (probably quite unjustified) that neither QL nor her engine has ever quite recovered from Mrs. Elliott Lynn's 79 landings in one day.

LIVERPOOL & DISTRICT AERO CLUB

(MAY 19–25).—Machines in commission: Avro-Avians WK, XY, ZM. Instructor: Flight-Lieut. J. B. Allen. Ground staff: Messrs. H. Pixton, M. Mason Total flying time for week, 54 hrs. 50 mins. (a club record). Pupils, dual (23), 25 hrs. 35 mins.; pupils, solo (5), 5 hrs. 50 mins.; "A" pilots (17), 17 hrs. 35 mins.; passenger flights (16), 4 hrs. 30 mins.; test flights (16), 1 hr. 20 mins.

New pupils: Messrs. D. R. Debes and W. A. Rogers.

Miss Hughes accomplished a successful height test on Saturday, and Mrs. Eills performed a really excellent first solo.

Mr. Perkins also put up an excellent first solo, and Capt. Loundes and Mr. Barker completed their tests for aviators' certificates.

Notwithstanding the above activities, all machines are going strong except XX, which is being prepared for annual C. of A. inspection.

Another Mk. III radius rod misbehaved this week.

Waller dashed off the ground in another machine (leaving "Ustace" (the umbrella) unguarded for once, in his haste) in order to call Allen's attention to the defect. Allen handed over to Miss Hughes and did a spot of wing walking; saw which wheel was at fault, and landed perfectly on the other, doing no damage to the machine, except, of course, a broken airscrew. This is the second time Allen has "got away with it"—practice makes perfect, maybe.

MIDLAND AERO CLUB

(MAY 26–JUNE 1).—Total flying time: 30 hrs. 33 mins. Dual: 13 hrs. 10 mins. Solo: 8 hrs. 20 mins. Passenger: 8 hrs. 10 mins. Test: 53 mins.

The following members were given dual instruction by Flight-Lieut T. Rose, D.F.C., and Mr. W. H. Sutcliffe: L. W. Farrer, G. Norton, E. Skuce, K. S. Neale, F. T. Lydall, Dr. W. G. Tilleke, F. G. Robinson, T. G. Ellison, H. G. Tower, R. O. Wilcoxon, P. B. Hackett, E. C. Merrick, T. W. Wild. H. A. Taylor, D. N. Khatri, L. V. Mann, J. A. Ridsdale, N. B. Tompson, Advanced dual: K. J. Morton, S. G. Hall. "A" pilots: J. Rowley, S. H. Smith, E. P. Lane, R. D. Bednell, E. R. King, S. G. Hall, J. K. Morton. W. M. Morris, R. C. Baxter, R. L. Jackson, E. D. Wynn, S. Duckitt, W. Swann, Soloists: H. E. Evans, Dr. W. G. Tilleke, O. B. Hackitt, R. O. Wilcoxon. Passengers: A. Methley, J. E. Yardley, G. H. Smart, Mrs. E. R. King, T. H. Meakin, Miss E. Beldon, W. Breedon, T. L. Taylor, H. F. Wilcoxon, T. H. Ellison, E. Hanson, J. E. Hicks, W. H. Craven, Mrs. Griffin, O. W. Benwell.

On Saturday Flight-Lieut. Rose terminated his position of Chief Instructor with the Midland Aero Club on taking up an appointment with the Anglo-American Oil Co.

During the 15 months in which Flight-Lieut. Rose has been with us he has endeared himself to every member of the club, not only as a most capable Flying Instructor, but as a very valued friend and helper. Flight-Lieut. Rose was presented with a cheque subscribed for by members of the club and carries with him the very best wishes of everyone.

NEWCASTLE-UPON-TYNE AERO CLUB

(MAY 27–JUNE 2).—Instructor: G. M. S. Kemp. Engineer: F. Dunning; Assistant: J. Tait. Aircraft: (3), PT, LX, QV. Flying time: 22 hrs. 15 min. Instruction: 16 hrs. 35 mins. "A" pilots: 3 hrs. 35 mins. Solo training: 5 mins. Passengers: 1 hr. 50 mins. Tests: 10 mins.

Cramlington Aerodrome was the scene of great activity on Thursday night. The *Daily Mail* 'plane, "Geraldine," landed at 10.45 p.m. with the blocks for the printing press. Flares were lighted, and Verey lights were set off in order to assist the pilot to land safely, which he did quite accurately. Mr. Matthews, the mechanic of the 'plane, was in charge of the operations, and the ground staff ably assisted him.

The firm's cars were on the spot awaiting the arrival of the 'plane, and they rushed the blocks off to the press.

Mr. Sutherland, on Wednesday last, successfully accomplished his first solo flight. Friday morning saw the arrival of two other 'planes, one belonging to the Manchester Airways and the other to A.D.C. Both machines were packed with *Daily Express* newspapers giving the latest election news. Capt. Kingwell and Capt. Blake were the two pilots, and they passed the remark that they had been within 30 miles of the aerodrome and had to turn back on account of the bad weather.

SOUTHERN AERO CLUB

(MAY 16–26).—The recent fine weather has been responsible for plenty of activity. Quite a number of members under instruction have taken advantage of the excellent flying conditions, and one or two soloists have also been "doing a spot."

Last week we were visited by Messrs. Grey and Riley from Stag Lane, on G-EBTD, the Moth with the sealed "Gipsy" engine which has done more than 400 hours untouched. They arrived with the evident intention of "setting the town alight," and apparently succeeded in doing so, at least to one of the inhabitants of Bungalow Town!

Mr. Pashley and Mr. Miles have been taking part in an air search for Mr. Mounsey, the missing banker, by flying low over the downs and the cliffs.

SUFFOLK & EASTERN COUNTIES AEROPLANE CLUB

(MAY, 1929).—Total flying time for month by Suffolk and Cambridge clubs: 93 hrs. 30 mins., as follows:—*Suffolk Aero Club.*—Total flying time: 77 hrs. 50 mins. 17 members were given dual: 25 hrs. 20 mins. Four members flew solo under instruction: 7 hrs. 45 mins. Flights were made by nine "A" and "B" members: 25 hrs. 35 mins. 26 passengers were carried: 14 hrs. 25 mins. 40 tests were made: 4 hrs. 45 mins.

Capt. Garland performed a creditable first solo during the month, and a number of new members started instruction. With the improvement of the weather new members are faster than ever before in the history of the club, and there is every prospect of an extremely busy summer. An apology is due to our many friends for the absence of reports during recent weeks, and this report is an attempt to bring things up to date. We have been extremely busy with the reorganisation of the club since the advent of the Cambridge branch and certain difficulties have been experienced in compiling the dual report at Hadleigh in time for press. It is hoped that these troubles have now been overcome and that reports will become more regular.

Cambridge Aero Club.—Total flying time: 15 hrs. 40 mins. 18 members were given dual: 11 hrs. 5 mins. Two members flew solo under instruction: 1 hr. 35 mins. Flights were made by two "A" licence members: 1 hr. 55 mins. Two passengers were carried: 10 mins. Nine tests were made: 55 mins.

The very low flying time in proportion to the number of members under instruction is accounted for firstly by misfortunes, and secondly by the fact that the shed was not completed during the period under review. During the early part of the month Mr. Pennington was on the sick list, and later he had the misfortune to break both one of our new machines and his arm at the Northampton Air Display. Thus the club had been struggling along on what assistance it was possible to send over from Hadleigh. However, the shed is now in course of erection and things should shortly be in full swing with two machines permanently at Conington. A strong local committee has been formed consisting of two senior and two junior members of the university and three county members. They are as follows: Mr. W. Hardesty, Chairman: Prof. Melville Jones, Mr. Van Grutten, Messrs. Hart, Cooke, Earnshaw and W. King. Naturally now that undergraduates may obtain permission to fly at the club it is essential that the University should be strongly represented on the committee.

This fact has caused the club to decide upon holding an air display at Conington on Monday and Tuesday next, June 10 and 11, as part of the May Week festivities. The organisation of this diplay has been left very largely in the hands of enthusiastic undergraduate members, and therefore it is certain to be well run, and we hope it will atract a large number of visiting pilots. If any private owners or others have not received notice of the event and would like to attend, will they please write to the Secretary, The Cambridge Aero Club, Norwich Union Buildings, St. Andrews Street, Cambridge, stating the make and registration of their machine, if they are bringing a passenger and if they desire accommodation for the night on Monday. There will be several competitions.

YORKSHIRE AEROPLANE CLUB

(MAY 26–JUNE 1).—Pilot instructor: Flight-Lieut. H. V. Worrall, D.S.C. Ground engineer: R. Morris. Assistant ground engineer: G. Speight. Machines in commission: 3 (SV, RF and BD). Flying time for the week: 34 hrs. 10 mins. Instruction: 7 hrs. 5 mins. (11). Soloists: 4 hrs. 15 mins. (6). "A" pilots: 21 hrs. (18). Passengers: 1 hr. 40 mins. (10). Test flights: 10 mins. (1).

On Thursday, May 30, Mr. Collins did his first solo and put up a very good show, likewise Mr. Langley, an ex-R.A.F. pilot, who did his first solo at the club. Mr. Bland commenced dual instruction.

FROM THE FLYING SCHOOLS

Brooklands School of Flying, Brooklands Aerodrome

(MAY 13–27.)—Instructors: Capt. H. D. Davis, Major C. M. Pickthorn, Capt. E. A. Jones, and J. M. Oliver. Total flying time: 83 hrs. 5 mins. Passengers carried, 1,114.

The excellent weather for the last two weeks has helped the school to make steady progress, and the machines have hardly been on the ground at all.

On Whit Monday, Capt. H. D. Davis and Mr. J. M. Oliver went to Northampton for the purpose of giving joy rides at the Northampton Aero Pageant, and were kept very busy all the time. Capt. E. A. Jones also carried a large number of passengers at Clacton-on-Sea, while Major Pickthorn stayed at Brooklands and gave joy rides on the D.H.50.

Mr. H. D. Bharucha went up for his height test on Saturday, and reached the height of 8,200 ft. Mr. Cross flew solo for the first time, and put up a very good show.

The following new pupils have joined the school:—Messrs. Kirkwood, Hughes, Sprake, McGuffie, Moore, White, and Dr. McKenzie.

(MAY 27–JUNE 2).—Instructors: Capt. H. D. Davis, A.F.C.; Capt. E. A. Jones; Maj. C. M. Pickthorn, M.C.; J. M. Oliver. Total flying time: 30 hrs. 15 mins.

The school has suffered considerably during the week from heavy and ever-changing winds. In spite of this, a good average time has been maintained. On the 31st, Capt. Jones had his night's rest cut short as the school was taking part in the newspaper rush after the election when we had to fly some hundreds of pounds of newspapers from Croydon to Norwich in the D.H.50, at 4 o'clock in the morning. We wish to congratulate our latest Chinese pupil, Mr. H. W. Mok, on a first-class first solo; altogether he did 1 hr. 5 mins. solo on the first day. One of the school pupils has now bought a Martynside F.6 machine, G-EBDK. We welcome Mr. H. V. Crayton-Daubenny.

Phillips and Powis School of Flying, Reading Aerodrome

(MAY 18–24).—Instructors: Flying-Officer R. T. Shepherd and Mr. H. B. G. Micklemore. Week's total flying time: 43 hrs. 40 mins. 700 passengers were carried by the school machines during the week.

The school now has 24 pupils under instruction, but is still open to take more. There are six soloists, the latest to join this rank being Maj. G. W. G. Allen.

Sir Alan Cobham spent two days with us during the week, during which days no less than 500 citizens of Reading took the air for the first time, either in the "61," "Youth of Britain," or in one of our machines.

A gathering of about 2,000 spectators watching Sir Alan's operations, seemed quite insignificant on our vast acres.

Surrey Flying Services School of Flying, Croydon Aerodrome

(REPORT for MAY).—Instructor: J. J. Flynn. Ground engineers: F. A. Kent and R. Fox. Aircraft: BW, GB, ZB, YW. Flying time since last report: 263 hrs. 50 mins. Passengers carried: 4,163.

The changeable weather over the week-end rather restricted our school work, so we were compelled to concentrate on joy riding. Many of our old pupils turned up and have been amusing themselves on BW. Mr. Storrs is a new pupil of outstanding ability, and did his first solo after 3½ hrs. solo, and is now waiting suitable weather to complete his tests for his "A" licence. Mr. Kashef has also completed a number of hours solo since joining our school. Mr. Fox and Mr. Brown have both completed their tests for "A" licence, Mr. Fox being the first of our employees to interest himself in aviation sufficiently to become a pilot.

Together with our activities at Croydon, we have machines flying at Epsom and Southend.

OVERSEAS CLUBS

THE KARACHI AERO CLUB, LTD.

(APRIL REPORT.)—Total flying time: 146 hrs. 30 mins. Dual instruction: 82 hrs. 35 mins. Unqualified solo flying: 2 hrs. 10 mins. Qualified solo flying and joyrides: 55 hrs. 10 mins. Test flights: 6 hrs. 35 mins.

During the month, four cross-country flights were carried out, two to Hyderabad, one in the neighbourhood of the Sukkur Barrage, and one to Lahore.

An innovation in the form of joy rides by night also took place, and in this connection, here is a copy of the local press report.

"The Karachi Aero Club, last evening gave yet another demonstration of its activities, when it staged a moonlight flying meeting with unqualified success.

"Neither in India, nor even in England, has any club held a meeting of this character before, but after last evening's venture, there is no doubt that night flying, specially in a country like India, where the moon can definitely be relied upon to do its duty, will now continue to attract a crowd of eager enthusiasts.

"From 9.30 p.m. till after midnight, VT-AAB, one of the club's two Moths, was continually taking up joyriders all of whom expressed themselves as wonderfully impressed with the experience. The flares on the landing ground, the moonlight on the ocean, the many lights of Karachi—all made a picture that was both a novelty and an attraction to those who saw it.

"The pilots last night were the club's instructor, assisted very kindly by Flight-Lieut. J. B. H. Rogers, R.A.F., both of whom are to be congratulated on having carried through the arrangements without a hitch.

"Owing to monsoon conditions, however, it is unlikely that further moonlight flying will take place till next September, but it is to be hoped that then the Aero Club will arrange for a meeting on an even larger scale."

No pupils obtained their Pilot's "A" Certificate during the month, but the very considerable amount of dual that was given should enable at least two or three certificates to be obtained this month.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

REPORT of Meeting of the Racing Committee, held on May 23.

Present: Air Vice-Marshal Sir W. S. Brancker, K.C.B., A.F.C., in the Chair; Flight-Lieut. D. W. F. Bonham-Carter; Capt. W. Dancy; Lieut.-Col. M. O. Darby, O.B.E.; Maj. Alan Goodfellow; R. Ashley Hall; Colonel F. Lindsay Lloyd, C.M.G., C.B.E.; Capt. C. B. Wilson, M.C.; In attendance: H. E. Perrin, Secretary.

King's Cup Air Race.—The following officials were appointed:—

Handicapper: Capt. W. Dancy.

Stewards: Air Vice-Marshal Sir W. S. Brancker, K.C.B., A.F.C.; Lieut.-Col. W. A. Bristow; Lieut.-Col. Sir Francis K. McClean, A.F.C.; Lieut.-Col. M. O'Gorman, C.B.

Organising Committee: Sqdn.-Ldr. T. H. England; Sqdn.-Ldr. R. A. de H. Haig. A.F.C.; Maj. R. H. Mayo; I. H. McClure.

Grosvenor Cup and S.B.A.C. Challenge Cup.—It was decided to hold the races for these Challenge Cups at the Newcastle Meeting to be held in October next.

REPORT of meeting of the Committee of the Royal Aero Club held at 3, Clifford Street, London, W.1, on Wednesday, May 29, 1929, at 5 p.m. Present: Lieut.-Col. M. O'Gorman, C.B., in the chair; Griffith Brewer; Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S.; Col. F. Lindsay Lloyd, C.M.G., C.B.E.; Lieut.-Col. Sir Francis K. McClean, A.F.C.; F. Handley Page, C.B.E.; Capt. C. B. Wilson, M.C.; H. E. Perrin, secretary.

Election of Members.—The following new members were elected: Osmond Spencer Baker, Godfrey Gerald Barker, Cyril Gordon Burge, Herbert Mondefiore Jackman, William Albert Martisus, Emile Espener Gordon Nicholson, Flying Officer Charles Henry Ffrench Nobbs, Edward Matthias Tiarks, Capt. William Collins Gordon Black.

Aviators' Certificates.—The following aviators' certificates (Nos. 8561–8606) were granted:—

8561 George Ernest Villiers, Hampshire A.C.
8562 Shiu Kau Lee, Brooklands School.
8563 Hugh Charles Malet Shaw, Midland A.C.
8564 Brian Edmund Lewis, Croydon Aerodrome.
8565 Antony Maynard Leonard, London A.C.
8566 Larry Rue, De Havilland School.
8567 Stephen Bertram Cliff, Nottingham A.C.
8568 William Paton Taylor, Liverpool and Dist. A.C.
8569 James Coram Barr, London A.C.
8570 Herbert Roy Fields, Yorkshire A.C.
8571 James Whaley Radbone, London A.C.
8572 Florence Margaret Wood, London A.C.
8573 Huntley Noel William Goss, Lancashire A.C.
8574 Joseph Edward Williamson, Jnr., Lancashire A.C.
8575 Ralph Douglas Keniston, Liverpool and Dist. A.C.
8576 John Henry Thompson, De Havilland School.
8577 Hon. Arthur Ernest Guinness, Hampshire A.C.
8578 Osmond Spencer Baker, Hampshire A.C.
8579 Joseph Richard Gill, Yorkshire A.C.
8580 Ronald William Fox, Surrey Fl. Services.
8581 Charles Maurice Brown, Surrey Fl. Services.
8582 Otto Jens Marstrand, Liverpool and Dist. A.C.
8583 Mary Stewart Dashwood Wilson, De Havilland School.
8584 Malcolm Forsyth Bamford, Yorkshire A.C.
8585 Thomas Percy Gleave, Liverpool and Dist. A.C.
8586 Clement Mortimer Lee, Bristol and Wessex A.C.
8587 Cyril Bertram Collins, Lancashire A.C.
8588 John Claude Waller, Liverpool and Dist. A.C.
8589 Harry Sigmond Stern, Lancashire A.C.
8590 Leonore Mary de Chanval Pellier, Bristol and Wessex A.C.
8591 Ian Constable Maxwell, Lancashire A.C.
8592 Leslie Rowson, London A.C.
8593 Joseph Meyler Symmons, London A.C.
8594 John Lister Shand, Hampshire A.C.
8595 Arthur Barry Farwell, Bristol and Wessex A.C.
8596 Allen Conn Pollock, Yorkshire A.C.
8597 Ralph Henry Moon, Yorkshire A.C.
8598 Arthur Leslie Parkinson, Yorkshire A.C.
8599 Francis Seymour-Williams, Bristol and Wessex A.C.
8600 Richard Lewin Lowndes, Liverpool and Dist. A.C.
8601 William Foster, De Havilland School.
8602 William Collins Gordon Black, De Havilland School.
8603 Peter Mones Maury—Marquis de Casa Maury, De Havilland School.
8604 Homi Dhunjishaw Bharucha, Brooklands School.
8605 Arthur Philip Glenny, Henderson School.
8606 Gordon William Bennett, Brooklands School.

Offices: THE ROYAL AERO CLUB,
3, CLIFFORD STREET, LONDON, W.1.
H. E. PERRIN, Secretary.

New Air Service

IMPERIAL AIRWAYS announced the introduction of a new afternoon air service of Armstrong-Whitworth air liners between London, Le Touquet and Paris, which began on June 1. The air liners leave Croydon aerodrome each weekday at 4·30 p.m., and after calling at Le Touquet at 5.50 p.m., arrive in Paris at 7.20 p.m. The service in the reverse direction runs non-stop from Paris to London, leaving Paris at 4 p.m. and reaching Croydon at 6.30 p.m. Afternoon tea is served free while flying over the Channel.

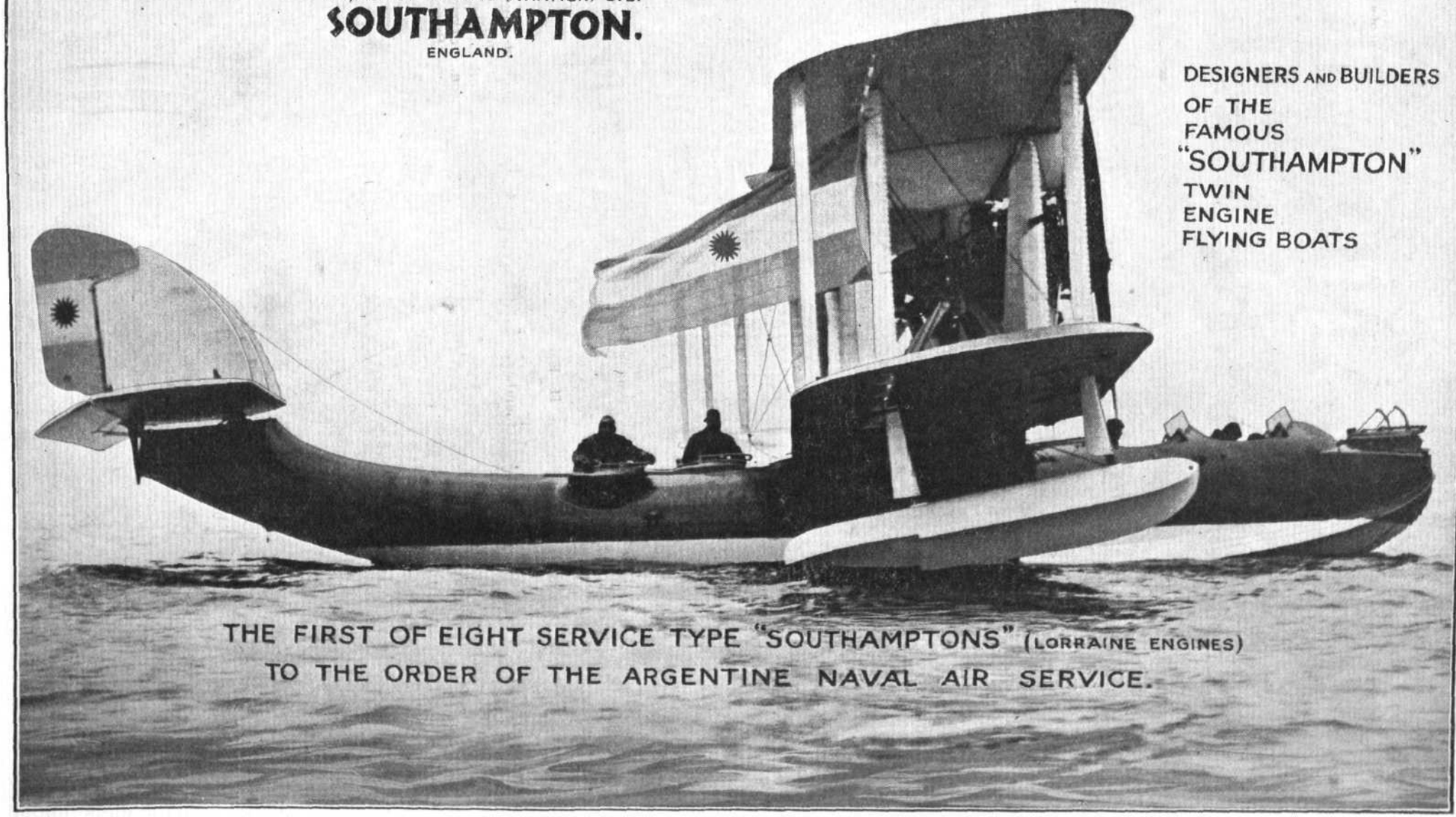
"Remax"

WE have just inspected a specimen of "Remax" tubing, manufactured by A. S. Gregg & Co., of Eden Street, Hampstead Road, London. This tubing has been employed with considerable success for motorcar windscreen wipers, but just recently, "Remax" tubing has been adopted by the Air Ministry for use in connection with pilot's oxygen gear. "Remax" tubing possesses several noteworthy qualities; it is not only exceedingly strong and proof against fire, petrol, oil and water, but is remarkably flexible—it can be bent, twisted and knotted without fracture occurring. This tubing is composed of an inner foundation of finest quality rubber, which is crossbraided with soft cotton. Finally, it is given an outer finish of "Remax" black cellulac. A test made with "Remax" tubing showed it capable of withstanding a pressure of 150 lbs. per sq. in.

New Flying Boot

D. LEWIS, the Tailor and Outfitter, now have in stock a new sheepskin flying boot, fitted with lightning fastener. The address of the company is 124, Great Portland Street, W.1.

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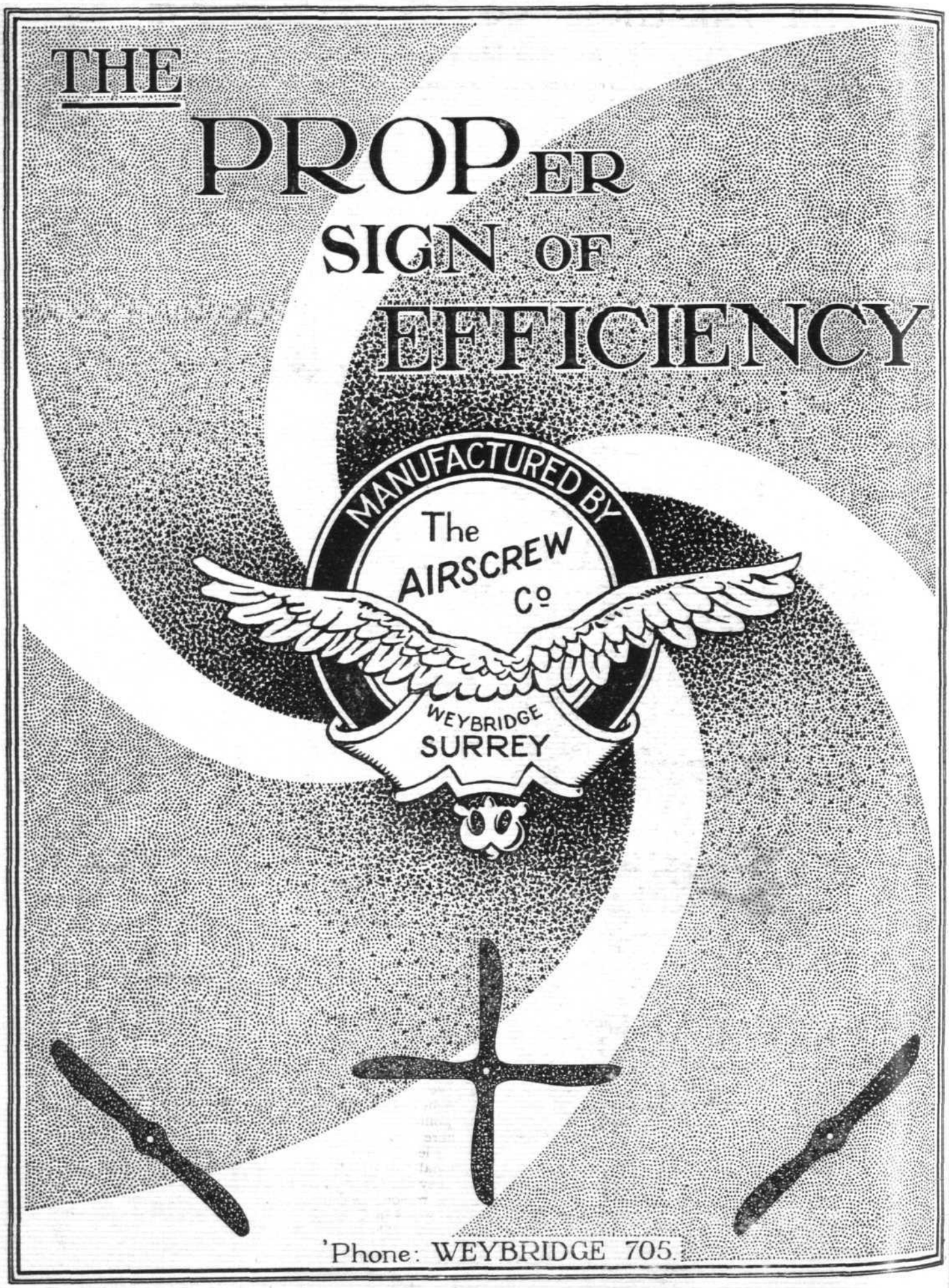
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(587)



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THE PARACHUTE AND ITS DEVELOPMENT

An Irvin Modification

IN the past the wide use of parachutes has been confined to military airmen. Civilian pilots have rather scorned the parachute. But in America today the latter are changing their opinion. It is a significant fact that they are ordering more parachutes of the Irvin type than are the Air Services, which have long since made the Irvin their standard equipment. There is actually an order (with a cheque) a day placed by American civilian airmen with the Irving Air Chute Co., of Buffalo.

It has long been a strange fact that civilian airmen should ignore the parachute when skilful Air Force pilots never fly without it. There is no question of the Air Force pilot needing it more. The parachute is a safeguard in any flight in any conditions except in an extremely low altitude. We have achieved a very high degree of safety in flying today, and it will go higher, but until we reach the absolute there is a fundamental reason why a parachute should be worn for every flight. This must be true, otherwise the senior Air Services of the world would not encumber their pilots with the equipment on every sort of flight.

Experience has been particularly ruthless in proving the wisdom of never leaving the parachute off. We will quote a few examples. On the pan-American Air Service flight, 1927, which was carried out in Loening amphibians, a very brief stage was being flown in the South American section, and the pilots of one machine thought that they would not trouble to strap on their parachutes for so short a time. There was a collision between their machine and the leader's. Because they were without parachutes they lost their lives, whilst the leader and his pilot were saved by theirs.



Capt. Willy Coppens, the Belgian war-time "ace" and now Belgian Air Attaché, wearing the Irvin parachute with which he made a successful jump of 19,500 ft. in France on September 24, 1928.

An American civilian pilot who had put his parachute aside on one occasion had his joy-stick break at the base. He was killed. Inspection of all the machines of the same type on that air line showed that the defect in the stick could only have happened in that particular machine.

The first two Irvin parachutes sent for inspection to Sweden were casually noticed lying in their packing case by a Swedish flying officer. He decided to wear one for his next flight just for the novelty. His wings came off on that very flight and he saved himself with the parachute.

The parachute is absolutely essential on all experimental flights, as the following examples show. In February this year Flight-Lieut. S. L. G. Pope, the R.A.F. experimental test pilot, was testing a new high-performance single-seater fighter. The rudder came off. He put the nose up for the better convenience of jumping over, but the machine went into a roll and got on its back. Pope got free at 1,000 ft. and landed safely with his Irvin parachute. He stands over 6 ft. high and weighs about 15 stone.

More recently, Flight-Lieut. D. W. Bonham Carter and Mr. Scott Hall were forced to jump with their Irvin parachutes. They landed safely.

All these successful jumps make the pilots automatically members of the Caterpillar Club, which was originated in America but is international in its application and not reserved to American airmen only. When the Irving Air Chute Co., Ltd., are aware of life being saved with their parachutes they send the airmen concerned a gold tie-pin of caterpillar design.

The American Irving Air Chute Co., which has its plant in Buffalo, has reached a production of 100 parachutes weekly, and, subsequent to its re-financing, they are planning to establish branch factories in Europe beside the present factories in England and Warsaw. They are endeavouring to secure factory sites in France, Germany, Italy and Central Europe, also possibly Serbia. Already 30 Governments are being supplied, 20 of them having made the Irvin parachute standard equipment.

The manufacturers in England are an English company mainly producing for the Royal Air Force. Their rate of production now is 35 per week. It is interesting to know that 6,000 official tests with dummies in this country under all conditions gave the experts the conclusion that all these would have been successful had they been live drops The few failures which did occur were such that would automatically not occur in live drops, or would be corrected by the difference in the falling of the human body. A dummy often drops vertically all the way, but a man always rolls over and over, which, for instance, obviates the body shielding and obstructing the parachute.

Mr. Irving, who controls the English company at Letchworth, Hertfordshire, is now producing a parachute which need not be worn until it is required. It is not to take the place of the ordinary type, neither is it recommended to do so. It is to suit observers, who often have so much gear, like wireless and armament, in their cockpit that they cannot conveniently wear their parachute.

Mr. Irving has therefore detached the parachute from the harness, and it can be hung in the cockpit. When required, it can be quickly hooked on at two points on the front of the vertical harness. The action of attachment will take but a fraction of a second. Should only one hook be snapped on, however, the parachute will function just as safely. The only difference would be that as the man would be suspended at one point only, he would have less control of his descent.

There have been 200 lives saved with Irvin parachutes, and at least 15,000 live drops have been made. In America, National Flying schools are being formed at every big city, and they have ordered 200 Irvins for each school.

One reason, perhaps, why commercial pilots or private owner pilots in England do not adopt parachutes is owing to their cost. The Irvin costs about £70.

◈ ◈

Sir Henry Segrave

SIR HENRY SEGRAVE flew to Berlin from Croydon on May 29, to compete in motor boat races against fast German surface craft.

Adelaide-Perth Air Service

THE *City of Adelaide* and the *City of Perth* (D.H. 66's with "Jupiters"), which inaugurated the Adelaide and Perth service, covered the distance of 1,450 miles to Perth on May 29 in 14 hrs. flying time. The flight was perfect and twenty-one passengers were carried in all. Major Brearley, of the Western Australian Airways, assisted in one machine.

NAPIER ANNUAL STAFF DINNER

THE annual staff dinner of D. Napier and Son was held on Saturday last at the Wharncliffe Rooms of the Great Central Hotel, Mr. H. T. Vane, C.B.E., Managing Director of Napiers, presiding.

The Chairman, in proposing "The Staff," expressed his pleasure at seeing so many old familiar faces at this year's gathering. He was sorry that Mr. Napier was not able to be present, but was glad that now summer had come there was reason to hope for an improvement in his health. Referring to the strenuous time through which Sir Harry Brittain had just passed, Mr. Vane thought it very good of him to come to their dinner instead of taking a well-deserved rest from his labours. He thanked all the staff for their response to the severe calls that had been made upon them during the past year. Recalling some Napier successes during the year Mr. Vane referred to the triumphs of the non-stop flight to Karachi, the records established by Segrave and Malcolm Campbell and the flying-boat flight to Australia and Singapore, in all of which Napier engines were used. He thought that perhaps the merits of Malcolm Campbell's records had not received the appreciation they deserved. The Napier firm was trying its best to produce engines which would win this year's Schneider competition. They were "up against it," but would do their best.

Mr. Baume replied to this toast, saying how pleased he was to work for such a wonderful organisation as that of Napiers. One thing that particularly impressed him was the quality of the drawings. They could rely on the drawings and worked to them.

Sir Harry Brittain referred to the importance of continuity of service. They had that in the Napier firm, and the Chairman had mentioned his pleasure in seeing so many familiar faces again. Concerning his recent defeat in the General Election, Sir Harry said that he had come through four victories with a smile, and he thought it only right that he should show them that he could, as an Englishman should, also take defeat with a smile.

In proposing the toast of "The Press," Sir Harry coupled with it the name of Maj. C. C. Turner, one of the pioneers of aviation, who not only was one of the first 100 British pilots of heavier-than-air craft, but also at one time held a balloon record.

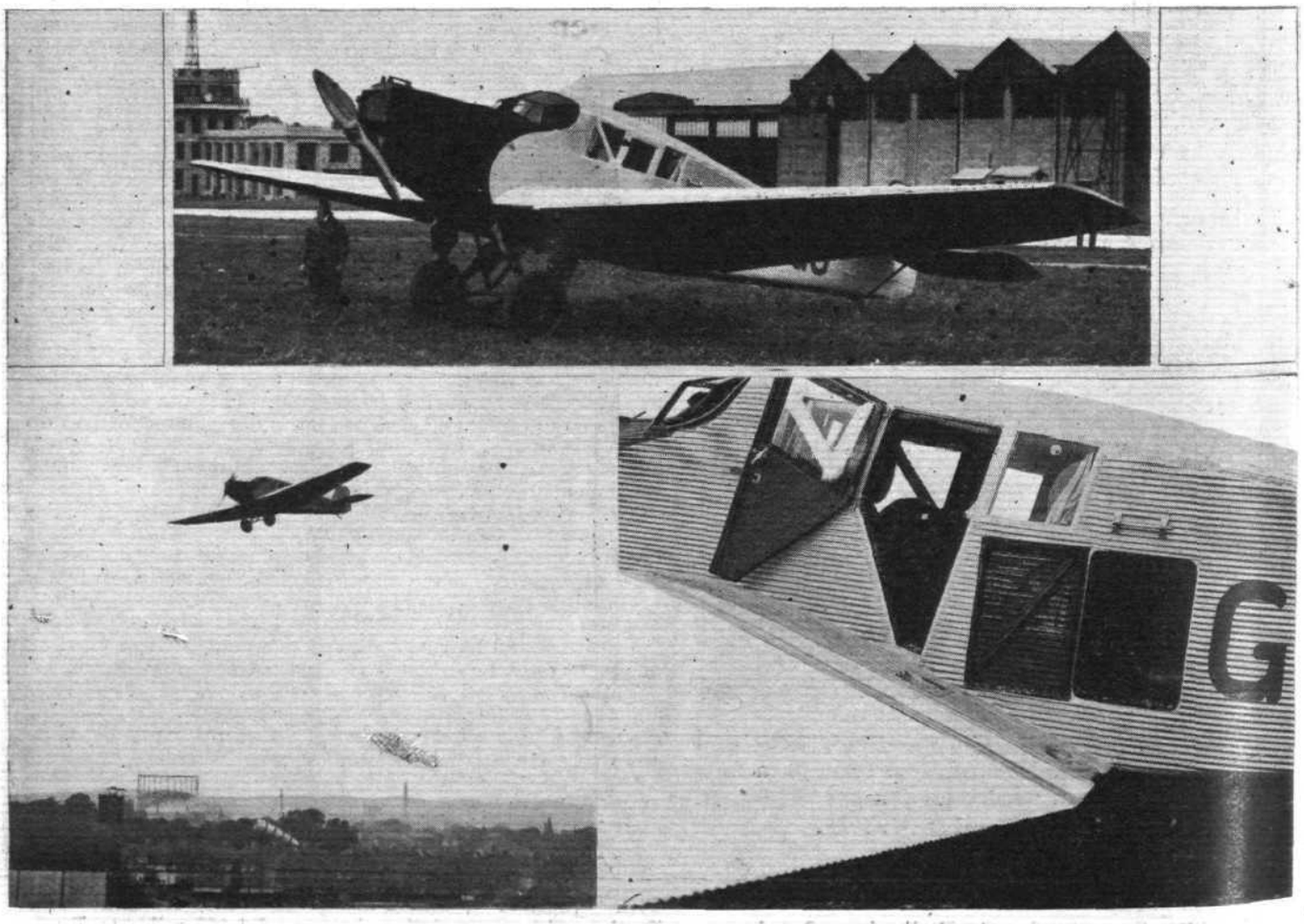
Maj. C. C. Turner, referring to Sir Harry Brittain's complimentary remarks about the British Press as the greatest and straightest in the world, said that whatever differences of opinion the various sections of the press might have, they could all agree in their appreciation of good workmanship such as one associated with the products of the Napier firm.

Mr. Cooper, the new works manager, had to propose "The Firm," but as he had not been with the Napier Company for more than a very short time, he felt he could not really do so adequately.

Mr. Pate, *chief engineer of Napiers*, had just returned from a holiday in Scotland, and suggested that another year the time for the staff dinner should be changed. He referred to the long hours which the staff had been called upon to put in, and to the necessity of continuing to do so until September 6.

Mr. Handforth, chief chemist, in proposing the toast of "The Chairman," said he did not often have occasion to meet Mr. Vane. Some time ago he had had to ask a favour of Mr. Vane, and that favour was readily granted. It was the first for several years, and amounted if he was not mistaken to £27 10*s.* 4*d.* (laughter). (It is gathered that the "favour" referred to relates to an incident in which figured Mr. Handforth, a car, and some teak gates !)

Intervals between speeches were amusingly filled by a number of much appreciated artistes, of whom Miss Wini Ceci captured the audience with her songs, as well as filling very admirably the rôle of accompanist to the other artistes. Mr. Fred Duprez, of radio fame, appeared "in the flesh," and Mr. Percy Albert insisted that he was "a foreman, above the others, you know," while Mr. Howard Fry struck a more serious note.



"PEACEFUL PENETRATION": One of the latest Junkers type F.13 monoplanes has been registered in this country, and is now on a tour. Of the same general type as the famous "Bremen" this machine has a Junkers L.5 engine and seating accommodation for four passengers. It is intended for use by the wealthier class of private owner, or for air taxi work. Note large luggage compartment. ["FLIGHT" *Photos.*

First Light Aeroplane Flight to China

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MR. Wen Lin Tschen, a Chinese aviator, and Mr. C. L. Johannsen in their Avro Avian light aeroplane, fitted with a "Cirrus Mk. 111" engine, have successfully accomplished their flight from Croydon Aerodrome to China, using Shell spirit and Golden Shell oil throughout.

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THE ROYAL AIR FORCE

London Gazette, May 21, 1929

AUXILIARY AIR FORCE

General Duties Branch

No. 601 County of London (Bombing) Squadron.—The follg. to be Pilot Officer :—B. S. Thynne (March 30).

No. 602 City of Glasgow (Bombing) Squadron.—The follg. Pilot Officer to be Flying Officer :—Douglas Douglas-Hamilton, Marquess of Douglas and Clydesdale (Jan. 4).

No. 605 County of Warwick (Bombing) Squadron.—Flying Officer A. M. Glover resigns his commission (May 9).

Accountant Branch

No. 605 County of Warwick (Bombing) Squadron.—The follg. to be Pilot Officer :—F. P. Williams (April 1).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified :—

General Duties Branch.

Air Commodore : F. W. Bowhill, C.M.G., D.S.O., to Air Ministry on appointment as Director of Organisation and Staff duties, 19.5.29.

Wing Commander : C. W. Nutting, O.B.E., D.S.C., to Station H.Q., Hal Far, Mediterranean, to Command, 10.5.29.

Squadron Leaders : A. M. Moffatt, to R.A.F. Practice Camp, Catfoss, 8.5.29. G. E. Godsave to No. 1 Flying Training Sch., Netheravon, 26.5.29.

Flight Lieutenants : E. Drudge, M.B.E., to Electrical and Wireless Sch., Flowerdown, 13.5.29. J. L. Wingate to R.A.F. Practice Camp, Catfoss, 8.5.29. G. Combe, to R.A.F. Practice Camp, Catfoss, 8.5.29. L. S. Potter, to No. 10 Sqdn., Upper Heyford, 21.5.29. A. C. Sanderson, D.F.C., to No. 3 (Indian) Wing H.Q., India, 15.4.29. J. R. I. Scambler, D.F.C., to No. 5 Sqdn., India, 30.3.29, instead of No. 31 Sqdn. as previously stated. A. P. White, to Armament & Gunnery Sch., Eastchurch, 8.5.29. B. E. Embry, A.F.C., to Central Flying Sch., Wittering, 15.5.29. W. A. Opie, to Home Aircraft Depot, Henlow, 18.4.29. L. N. Hollinghurst, D.F.C., to Armament and Gunnery Sch., Eastchurch, 14.5.29. A. F. James, to No. 2 Flying Training Sch., Digby, 16.5.29.

Flying Officers : H. T. J. Jagger, to Central Flying Sch., Wittering, 21.5.29. P. Coyle, to Aircraft Park, India, 11.4.29. H. T. A. Silcox, to Station H.Q., Heliopolis, Middle East, 28.4.29. M. M. Restell-Little, to Station H.Q., Heliopolis, Middle East, 28.4.29. J. S. Georgeson, to R.A.F. Depot, Uxbridge, 1.5.29. A. F. Merritt, to No. 84 Sqdn., Iraq., 25.4.29. F. G. Fairhead, to No. 84 Sqdn., Iraq., 29.4.29. C. H. Morgan, to R.A.F. Depot, Uxbridge, 8.6.29. R. H. C. Taylor to Armoured Car Wing, Iraq, 23.4.29. F. G. H. Ewens, to Electrical and Wireless Schl., Flowerdown, 23.4.29. N. A. P. Pritchett, to Electrical and Wireless School, Flowerdown, 11.5.29. P. Jones, L. Dalton-Morris and J. H. Pool, all to Elect. and Wireless Schl., Flowerdown, on 13.5.29. F. W. Moxham, to Central Flying School, Wittering, 5.5.29. H. E. Power, to Central Flying Sch., Wittering, 12.5.29.

Pilot Officers : A. J. P. Groom, to School of Balloon Training, Larkhill, 15.5.29. G. C. Butler, to No. 207 Sqdn., Eastchurch, 11.5.29. C. W. F. Carter, to No. 4 Sqdn., S. Farnborough, 11.5.29.

Stores Branch.

Flying Officers : G. L. Worthington, to H.Q., India, 22.4.29. D. A. W. Sugden, to Station H.Q., North Weald, 15.5.29. G. H. Doveton, to 23 Group H.Q., Grantham, 7.3.29.

Accountant Branch

Flight Lieutenants : R. G. Dyer, to H.Q., Iraq, 22.3.29. W. S. Calder, to H.Q., Iraq, 10.5.29.

Flying Officer : J. H. S. Richards, to Aircraft Depot, India, 27.4.29.

Medical Branch.

Squadron Leader : T. K. Place (Dental), to R.A.F. Depot, Uxbridge, 30.4.29.

Flying Officer : T. A. Edwards, M.B., to R.A.F. Practice Camp, Catfoss, 13.5.29.

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CORRESPONDENCE

[The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.]

THE "DESOUTTER" LEG

[2195] Referring to the two articles dealing with the Desoutter Aircraft Company, published in the two issues of FLIGHT dated April 25 and May 2 respectively, I have noticed on re-reading same that both articles contain statements which, not being strictly accurate, might cause dissatisfaction to those concerned.

The points I refer to are the statements that I evolved the Desoutter artificial leg, and that I established the business of Desoutter Bros., Ltd.

To the general public who are unaware of the real facts, these statements would convey the impression that I alone was responsible for the designing of the Desoutter leg and the establishing of the business. This is not strictly accurate, the actual facts being as follow :—

The business of Desoutter Bros., Ltd., was founded and established jointly by Mr. Charles Desoutter and myself, but the invention and designing of the Desoutter artificial leg was entirely due to the engineering ability of Mr. Charles Desoutter, for which achievement I desire to give him full credit.

I shall, therefore, be obliged if you will publish a letter or notice to the above effect as soon as space permits.—Yours faithfully,

DESOUTTER AIRCRAFT CO., LTD.

Desoutter Aircraft Co., Ltd.,
Croydon Aerodrome,
May 7, 1929.

A. M. DESOUTTER,
Managing Director

[This letter, which should make the position quite clear, has been held over until now, owing to lack of space.—THE EDITOR.]

THE FIRST ATLANTIC FLIGHT

[2196] Amongst the nations it is more than doubtful whether modesty be altogether a virtue. Certainly it is possible for a nation to possess that virtue in excess and for its prestige and its morale—to suffer in consequence. These reflections arise in my mind on the near approach of the tenth anniversary of one of the greatest achievements in the history of aviation. It was a British achievement and it is a matter for national self-reproach that the feat to which I refer—the first crossing of the Atlantic by aeroplane— has been allowed to sink into comparative oblivion. A well-informed observer in Canada asserts that to the question : "Who first flew across the Atlantic ?" 99 out of a 100 persons living West of that ocean would reply "Lindberg." I fear that much the same ignorance exists here also.

On June 14, 1919, the late Sir James Alcock and Sir Arthur Whitten Brown flew from Newfoundland to Clifden, in Ireland, in 16 hours, 12 mins. The distance was about 1,900 miles, and they accomplished the flight upon a British built land machine. The gallant airmen were acclaimed and rightly rewarded by the honour of knighthood, but their wonderful achievement was not adequately apprehended, because, like all pioneers, they were in advance of their time. National interest in aviation was not yet fully aroused, and it is significant to recall that eight years elapsed before the transatlantic flight by aeroplane was accomplished the second time. To revive these memories is not to minimise the merits of Colonel Lindbergh's solitary flight which so powerfully appealed to us all. His reception in England was as enthusiastic as that accorded to him by his own countrymen, and our admiration of his singular and charming modesty was and is unstinted.

Nevertheless, it is high time that the prior achievements of our own heroes should be nationally commemorated. No permanent memorial to Alcock and Whitten Brown has been set up and this tenth anniversary of an epoch-making flight affords us an opportunity of remedying the omission. The landing-place of the intrepid adventurers at Clifden should surely be marked and preserved for all time. (I imagine that the Dominions of Canada and Newfoundland would whole-heartedly co-operate in similarly marking the point of departure). Their heroic memory could also be appropriately honoured by the establishment, for instance, of an Alcock and Whitten Brown Gold Medal, to be awarded annually upon the anniversary of the historic flight. These are mere suggestions, but I feel sure that any well-considered proposal put forward by the official aviation societies would meet with universal support throughout the Empire. We are the present holders of the Schneider Cup and are now rapidly becoming "air-minded." Surely the time is ripe for a tardy act of justice which will, incidentally, do much to re-affirm our prestige in the eyes of the civilised world.

C. C. WAKEFIELD.

London, E.C.2,
June 4, 1929.



A view of the large and varied exhibition of Armstrong Siddeley Motors, Ltd., aero-engines at the recent Geneva Aero Show.

THE ROYAL AIR FORCE MEMORIAL FUND

IN a few months now, the above fund will have been in existence 10 years. It has fulfilled all the original objects with which it started, and is still actively engaged in affording relief to all ranks who have served, or are serving, in the Royal Air Force, and in those forces formerly known as the Royal Naval Air Service, the Royal Flying Corps, and the Women's Royal Air Force. Up to the end of 1928, £71,200 had been expended in relief of distress to ex-officers and ex-members of all ranks and their dependents.

Relief takes various forms, but special consideration is given to grants for education of children and large sums of money are spent in this and other directions.

The Executive Committee of the Fund (which is now presided over by Sir Charles McLeod, Bart., who succeeded Lord Hugh Cecil, P.C., M.P., in the chairmanship recently) has delegated to the Grants Sub-Committee the duty of making grants, and that Committee meets fortnighty to consider cases put before them, after due investigation has been made. Applications for assistance, both as regards education, and for other purposes, from all ranks who have served, or are serving in the Royal Air Force, or from dependent relatives, should be addressed to the Secretary, R.A.F. Memorial Fund, 7, Iddesleigh House, Caxton Street, London, S.W.1.

Subscriptions and donations to the fund are solicited, and should be sent to the Honorary Treasurer at the above address, and will be gratefully acknowledged.

The usual meeting of the Grants Sub-Committee of the Fund was held at Iddesleigh House, on May 23. Mr. W. S. Field was in the chair, and the other members of the Committee present were: Mrs. L. M. K. Pratt-Barlow, Sqdn.-Ldr. A. H. Wann. The Committee considered in all 11 cases and made grants to the amount of £144 16s. 2d.

* * * *

FAIREY AVIATION CO.

THE statutory meeting of the Fairey Aviation Co., Ltd., was held on Monday last at Winchester House, Old Broad Street, London, E.C. Mr Charles R. Fairey, M.B.E., F.R.Ae.S., chairman of the company, presided. He said "We are now building aircraft almost entirely in metal, as the present Air Ministry policy is to buy all-metal machines only. They even insist on experimental types submitted for their consideration being constructed in metal. Our Hamble works are fully occupied with contracts for reconditioning machines. Our propeller department is particularly busy, and, as you are aware, this company holds the rights of the Reed patents for the British Empire and Mandated territories, and we are the only manufacturers of one-piece light-alloy propellers. Orders are coming in very satisfactorily, and it is interesting to note that the orders for small types for civil aircraft are increasing, as are also our exports. We believe that the metal propeller will ultimately supplant the wooden propeller, and we are carefully fostering this department.

"This year we are again designing and building the propellers for the Supermarine racers that will defend the Schneider Trophy. We have now completed the purchase of our new aerodrome, and as we have acquired some 150 acres at a price of £15,000 we regard the purchase as an economical one. A further expenditure of some £15,000 is expected to be made during the current year for buildings. The buildings at the new aerodrome will be equipped for final erection work, whereby we hope to effect some economy in production.

"We have at the moment no less than three new types on test, two of which will be submitted to the authorities for preliminary test this week, and another shortly afterwards. A further one will be completed in about two months, and yet another is due for delivery by next March."

"We are not at liberty to disclose any particulars or details of these machines, but your directors are hopeful that at least a proportion of them will be adopted and result in further orders. The policy will be maintained and further types laid down for delivery in the next financial year.

"Your directors are watching the development of civil aviation very closely against the time when we can utilize the technical knowledge that we have acquired and are continuing to acquire to enter into that field in the future."

PUBLICATIONS RECEIVED

Meteorological Office Geophysical Memoirs: No. 46. A Study of the Vertical Gradient of Temperature in the Atmosphere near the Ground. By N. K. Johnson. H.M. Stationery Office, Kingsway, London, W.C.2. Price 3*s.* 6*d.* net.

The Air Pilot Monthly Supplement. No. 53. *March-April*, 1929. Air Ministry, Kingsway, London, W.C.2.

Catalogue

Ediswan Dry-charged Starting and Lighting Batteries. The Edison Swan Electric Co., Ltd., 123-5, Queen Victoria Street, London, E.C.4.

* * * *

AERONAUTICAL PATENT SPECIFICATIONS

(*Abbreviations:* Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

APPLIED FOR IN 1927

Published June 6, 1929

30,062. M. E. A. WRIGHT. Tail surfaces of aircraft. (311,348.)

APPLIED FOR IN 1928

Published June 6, 1929

3,494. V. VALENTINSEN. Screw propellers. (311,203.)
3,748. G. H. DOWTY. Operating devices for wheel brakes. (311,255.)
5,094. F. COOK. Air screws, propellers, etc. (311,472.)
6,517. GOODYEAR-ZEPPELIN CORPORATION. Hull structure for rigid airships. (292,527.)
15,015. GOODYEAR-ZEPPELIN CORPORATION. Method of treating outer covers for aircraft. (296,342.)
15,016. GOODYEAR-ZEPPELIN CORPORATION. Gas cells for rigid airships. (297,049.)
15,968. DORNIER-METALLBAUTEN GES. and Dr. C. DORNIER. Storage of driving fuel in seaplanes. (292,533,)
19,461. J. BOWIE. Aerial vessels. (311,589.)
22,220. S.A.B.S. SOC. ANON. POUR L'APPLICATION DES BREVETS SCHUL. Screw propellers. (294,985.)

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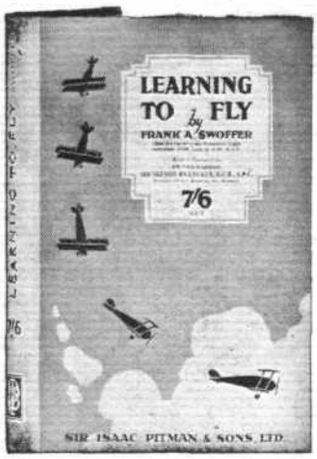
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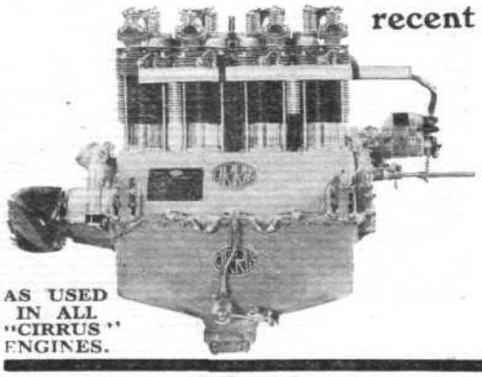
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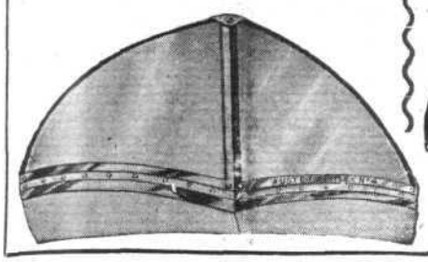
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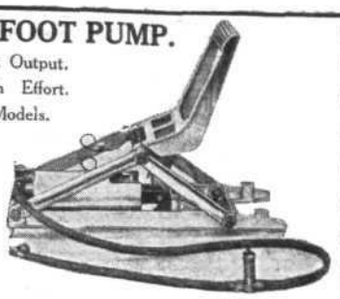
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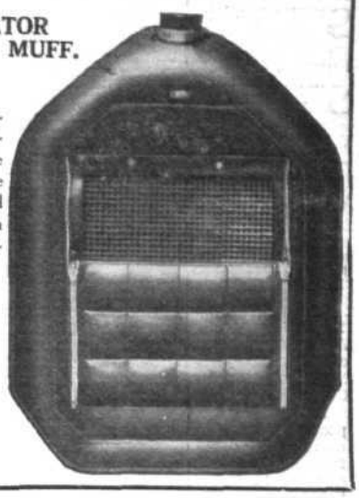
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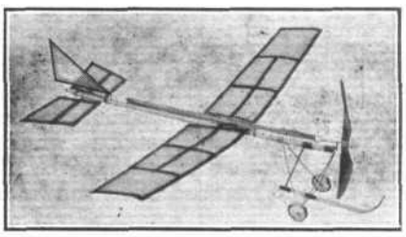
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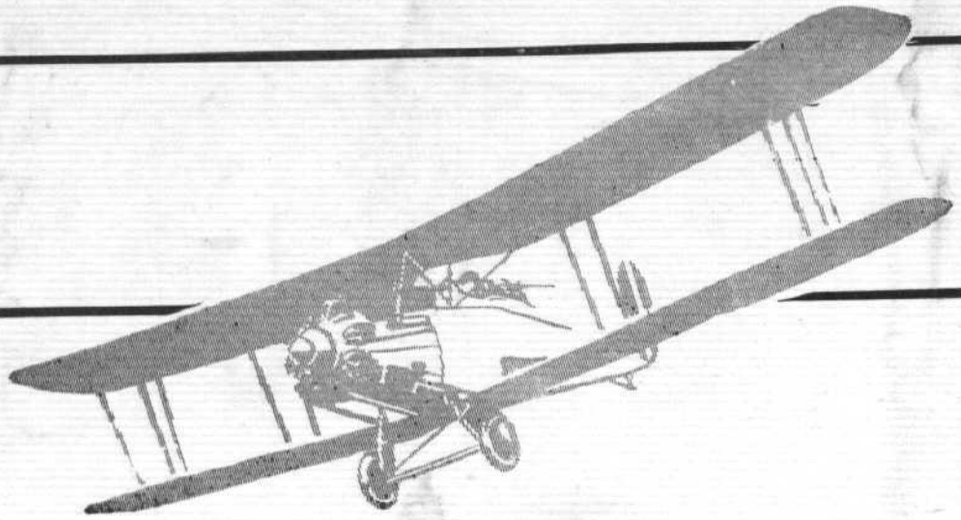
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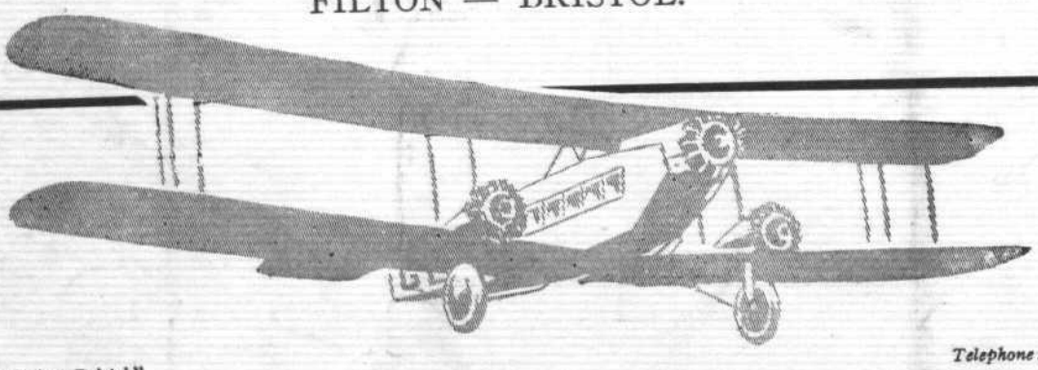
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